

VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a MAJOR, MUNICIPAL permit.

1. PERMIT NO.: VA0081302 EXPIRATION DATE: 1/27/2013
2. FACILITY NAME AND LOCAL MAILING ADDRESS FACILITY LOCATION ADDRESS (IF DIFFERENT)
- Hampton Roads Sanitation District  
Williamsburg STP  
1436 Air Rail Ave  
Virginia Beach, VA 23455
- 300 Ron Springs Rd  
Williamsburg, VA 23185
- CONTACT AT FACILITY: CONTACT AT LOCATION ADDRESS
- NAME: Jamie Heisig-Mitchell NAME: N/A  
TITLE: Chief of Technical Services TITLE:  
PHONE: (757) 460-4220 PHONE:
3. OWNER CONTACT: (TO RECEIVE PERMIT) CONSULTANT CONTACT:
- NAME: Mr. Edward G. Henifin NAME: N/A  
TITLE: General Manager FIRM NAME:  
COMPANY NAME: HRSD ADDRESS:  
ADDRESS: 1436 Air Rail Ave  
Virginia Beach, VA 23455
- PHONE: (757) 460-2261 PHONE: ( )
4. PERMIT DRAFTED BY: DEQ, Water Permits, Regional Office
- Permit Writer(s): Deanna Austin *DDA* Date(s): 4/4/12-4/27/12  
Reviewed By: Mark Sauer *MS* Date(s): 5/4/12
5. PERMIT ACTION:
- ( ) Issuance (X) Reissuance ( ) Revoke & Reissue ( ) Owner Modification  
( ) Board Modification ( ) Change of Ownership/Name [Effective Date: ]
6. SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:
- |               |  |
|---------------|--|
| Attachment 1  | Site Inspection Report/Memorandum  |
| Attachment 2  | Discharge Location/Topographic Map   |
| Attachment 3  | Schematic/Plans & Specs/Site Map/Water Balance   |
| Attachment 4  | TABLE I - Discharge/Outfall Description  |
| Attachment 5  | TABLE II - Effluent Monitoring/Limitations   |
| Attachment 6  | Effluent Limitations/Monitoring Rationale/Suitable<br>Data/Antidegradation/Antibacksliding |
| Attachment 7  | Special Conditions Rationale   |
| Attachment 8  | Toxics Monitoring/Toxics Reduction/WET Limit Rationale                                     |
| Attachment    | Material Stored  |
| Attachment 9  | Receiving Waters Info./Tier Determination/STORET Data/Stream<br>Modeling                   |
| Attachment 9  | 303(d) Listed Segments   |
| Attachment 10 | TABLE III(a) and TABLE III(b) - Change Sheets  |
| Attachment 11 | NPDES Industrial Permit Rating Worksheet and EPA Permit Checklist                          |
| Attachment 12 | Chronology Sheet   |
| Attachment    | Public Participation   |

APPLICATION COMPLETE: VDH Response 4/17/12 DSS 4/19/12

**PERMIT CHARACTERIZATION:** (Check as many as appropriate)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Existing Discharge | <input checked="" type="checkbox"/> Effluent Limited                   |
| <input type="checkbox"/> Proposed Discharge            | <input checked="" type="checkbox"/> Water Quality Limited              |
| <input checked="" type="checkbox"/> Municipal          | <input type="checkbox"/> WET Limit                                     |
| <u>SIC Code #4952</u>                                  | <input type="checkbox"/> Interim Limits in Permit                      |
| <input type="checkbox"/> Industrial                    | <input type="checkbox"/> Interim Limits in Other Document              |
| SIC Code(s)  | <input type="checkbox"/> Compliance Schedule Required                  |
| <input checked="" type="checkbox"/> POTW               | <input type="checkbox"/> Site Specific WQ Criteria                     |
| <input type="checkbox"/> PVOTW                         | <input type="checkbox"/> Variance to WQ Standards                      |
| <input type="checkbox"/> Private                       | <input type="checkbox"/> Water Effects Ratio                           |
| <input type="checkbox"/> Federal                       | <input checked="" type="checkbox"/> Discharge to 303(d) Listed Segment |
| <input type="checkbox"/> State                         | <input checked="" type="checkbox"/> Toxics Management Program Required |
| <input type="checkbox"/> Publicly-Owned Industrial     | <input type="checkbox"/> Toxics Reduction Evaluation                   |
|  | <input type="checkbox"/> Storm Water Management Plan                   |
|  | <input checked="" type="checkbox"/> Pretreatment Program Required      |
|  | <input type="checkbox"/> Possible Interstate Effect                    |
|  | <input checked="" type="checkbox"/> CBP Significant Dischargers List   |

8. **RECEIVING WATERS CLASSIFICATION:** River basin information.

Outfall No: 001-007

Receiving Stream: James River  
River Mile: 2-JMS032.30  
Basin: James River (Lower)  
Subbasin: N/A  
Section: 1  
Class: II  
Special Standard(s): a, bb  
Tidal: YES  
7-Day/10-Year Low Flow: N/A  
1-Day/10-Year Low Flow: N/A  
30-Day/5-Year Low Flow: N/A  
Harmonic Mean Flow: N/A

Outfall No(s): 008-012

Receiving Stream: Grove Creek to James River  
River Mile: 2-JMS032.90  
Basin: James River (Lower)  
Subbasin: N/A  
Section: 1  
Class: II  
Special Standard(s): a, bb  
Tidal: YES  
7-Day/10-Year Low Flow: N/A  
1-Day/10-Year Low Flow: N/A  
30-Day/5-Year Low Flow: N/A  
Harmonic Mean Flow: N/A

9. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Existing municipal discharge resulting from the discharge of treated domestic sewage.

10. **LICENSED OPERATOR REQUIREMENTS:** ( ) No (X) Yes Class: I

11. **RELIABILITY CLASS:** I

12. SITE INSPECTION DATE: 4/26/11

REPORT DATE: 4/28/11

Performed By: Mark Kidd

SEE ATTACHMENT 1

13. DISCHARGE(S) LOCATION DESCRIPTION: Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Hog Island Quadrant No.: 066B SEE ATTACHMENT 2

14. ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.

Narrative: This facility provides secondary treatment and some nutrient removal due to a plant change in 2012 in response to influent characteristic changes. Treatment is provided by screening, grit removal, primary clarification, oxidation towers, aeration, secondary clarification, chlorination and dechlorination. Biosolids are handled by sludge gravity belt thickening, centrifuge dewatering and then incinerated onsite.

SEE ATTACHMENT 3

15. DISCHARGE DESCRIPTION: Describe each discharge originating from this facility.

SEE TABLE I (OR CAN SUBSTITUTE PAGE 2C) - SEE ATTACHMENT 4

16. COMBINED TOTAL FLOW:

TOTAL: 22.5 MGD (for public notice)

PROCESS FLOW: \_\_\_\_\_ MGD (IND.)

NONPROCESS/RAINFALL DEPENDENT FLOW: 0.026 (Est.)

DESIGN FLOW: 22.5 MGD (MUN.)

17. STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS:  
(Check all which are appropriate)

☒ State Water Control Law  
☒ Clean Water Act  
☒ VPDES Permit Regulation (9 VAC 25-31-10 et seq.)  
☒ EPA NPDES Regulation (Federal Register)  
\_\_\_\_ EPA Effluent Guidelines (40 CFR 133 or 400 - 471)  
☒ Water Quality Standards (9 VAC 25-260-5 et seq.)  
\_\_\_\_ Wasteload Allocation from a TMDL or River Basin Plan

18. EFFLUENT LIMITATIONS/MONITORING: Provide all limitations and monitoring requirements being placed on each outfall.

SEE TABLE II - ATTACHMENT 5

19. **EFFLUENT LIMITATIONS/MONITORING RATIONALE:** Attach any analyses of an outfall by individual toxic parameter. As a minimum, it will include: statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); wasteload allocation (acute, chronic and human health); effluent limitations determination; input data listing. Include all calculations used for each outfall and set of effluent limits and those used in any model(s). Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for limiting internal waste streams and indicator pollutants. Attach chlorine mass balance calculations, if performed. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

**OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:**

**VARIANCES/ALTERNATE LIMITATIONS:** Provide justification or refutation rationale for requested variances or alternatives to required permit conditions/limitations. This includes, but is not limited to: waivers from testing requirements; variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

No variances were given during this permit reissuance.

**SUITABLE DATA:** In what, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

**ANTIDEGRADATION REVIEW:** Provide all appropriate information/calculations for the antidegradation review.

The receiving stream has been classified as tier 1; therefore, no further review is needed. Permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

**ANTIBACKSLIDING REVIEW:** Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

SEE ATTACHMENT 6

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale for each of the permit's special conditions.

SEE ATTACHMENT 7

21. **TOXICS MONITORING/TOXICS REDUCTION AND WET LIMIT SPECIAL CONDITIONS RATIONALE:** Provide the justification for any toxics monitoring program and/or toxics reduction program and WET limit.

SEE ATTACHMENT 8

22. **SLUDGE DISPOSAL PLAN:** Provide a description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

Biosolids are dewatered and incinerated onsite. The backup plan is incineration at other HRSD facilities. Secondary back up is to use the Bethel Landfill in Hampton, VA.

23. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

The materials stored on site include sodium hypochlorite, sodium bisulfate, sodium hydroxide, ferric chloride, polymer, fuel oil, propane, gasoline and diesel fuel. The materials are either stored in buildings with drains connected to the treatment system or are in contained areas. Fuel tanks are double walled.

24. **RECEIVING WATERS INFORMATION:** Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260-5 et seq.)]. Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied. Attach any memoranda or other information which helped to develop permit conditions (i.e. tier determinations, PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

SEE ATTACHMENT 9

25. **305(b)/303(d) Listed Segments:** Indicate if the facility discharges to a segment that is listed on the current 303(d) list and, if so, provide all appropriate information/calculations.

This facility discharges directly to the James River. This receiving stream segment has been listed in Category 5 of the 305(b)/303(d) list for non-attainment of Chlorophyll a, DO, estuarine benthics, and PCBs. EPA approved the Chesapeake Bay TMDL on 12/29/10 for this segment. The facility is listed in the TMDL as a non-significant discharger. Because an aggregated WLA exists, this permit did not receive an individual WLA.

A PCB TMDL for the tidal James River has an anticipated completion date of 2014.

26. **CHANGES TO PERMIT:** Use **TABLE III(a)** to record any changes from the previous permit and the rationale for those changes. Use **TABLE III(b)** to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 10

27. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET:**

N/A - This is a municipal facility.

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from DEQ planning.

The discharge is addressed in the Virginia Water Quality Management Plan and appears to be in conformance.

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

**VDH/DSS COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from the Virginia Dept. of Health and the Div. of Shellfish Sanitation and noted how resolved.

The VDH reviewed the application and waived their right to comment and/or object on the adequacy of the draft permit. Memo received 4/17/12.

The DSS has no comments on the application/draft permit. Memo received 4/19/12.

**EPA COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA has no objections to the adequacy of the draft permit. Email received 6/8/12.

**ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from an adjacent state and noted how resolved.

Not Applicable.

**OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

Not Applicable.

**OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT:** Document any comments received from other sources and note how resolved.

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

**DESCRIBE PN COMMENTS AND RESOLUTIONS. PROVIDE PUBLIC HEARING DATE AND REFERENCE BACKGROUND MEMORANDUM, IF APPROPRIATE.**

**PUBLIC NOTICE INFORMATION:** Comment Period: Start Date 5/21/12  
End Date 6/21/12

Persons may comment in writing or by e-mail to the DEQ on the proposed issuance/reissuance/modification of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Deanna Austin at: Department of Environmental Quality (DEQ), Tidewater Regional Office, 5636 Southern Boulevard, Virginia Beach, VA 23462. Telephone: 757-518-2008 E-mail: deanna.austin@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed issuance/reissuance/modification. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM



Facility:	HRSD WILLIAMSBURG
County/city:	JAMES CITY COUNTY

VPDES NO.	VA0081302
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**DEPARTMENT OF ENVIRONMENTAL QUALITY  
WASTEWATER FACILITY  
INSPECTION REPORT  
PART 1**

Inspection date:	April 26, 2011	Date form completed:	April 28, 2011
Inspection by:	Mark R. Kidd	Inspection agency:	DEQ/TRO
Time spent:	8 hours	Announced Inspection:	[ ] Yes [x] No
Reviewed by: Kenneth T. Raum <i>KTR</i>	Photographs taken at site? [x] Yes [ ] No		
Present at inspection:	Phil Mason, Matt Williamson		
FACILITY TYPE:		FACILITY CLASS:	
(✓) Municipal		(✓) Major	
( ) Industrial		( ) Minor	
( ) Federal		( ) Small	
( ) VPA/NDC		( ) High Priority ( ) Low Priority	
TYPE OF INSPECTION:			
Routine	✓	Reinspection	Compliance/assistance/complaint
Date of previous inspection:	September 18, 2008	Agency:	DEQ/TRO
Population Served:	Connections Served		
Last Month Average Influent March 2011	BOD <sub>5</sub> (mg/l)	562	TSS (mg/l)
		246	Flow (MGD)
		8.45	
Other:			
Last Month Average Effluent March 2011	BOD <sub>5</sub> (mg/l)	6	TSS (mg/l)
		5.6	Flow (MGD)
		8.45	Total -P (mg/l)
		1.32	
Other:			
Last Quarter Average Effluent 1 <sup>st</sup> Quarter 2011	BOD <sub>5</sub> (mg/l)	6	TSS (mg/l)
		5.6	Flow (MGD)
		8.06	Total -P (mg/l)
		1.4	
Other:			
Data verified in preface:	Updated?	NO CHANGES?	NA
Has there been any new construction?	YES	✓	NO
If yes, were the plans and specifications approved?	YES	✓	NO
DEQ approval date:			
COPIES TO: (x) DEQ/TRO; (x) DEQ/OWCP; (x) OWNER; ( ) OPERATOR; ( ) EPA-Region III; ( ) Other:			

## PLANT OPERATION AND MAINTENANCE

1.	Class/number of licensed operators:	I	?	II	?	III	?	IV	?	Trainee	?	
2.	Hours per day plant manned?	24/7										
3.	Describe adequacy of staffing	GOOD	✓	AVERAGE		POOR						
4.	Does the plant have an established program for training personnel	YES							✓	NO		
5.	Describe the adequacy of training	GOOD	✓	AVERAGE		POOR						
6.	Are preventative maintenance tasks scheduled	YES							✓	NO		
7.	Describe the adequacy of maintenance	GOOD	✓	AVERAGE		POOR						
	Does the plant experience any organic/hydraulic overloading?	YES								NO	✓	
8.	If yes, identify cause/impact on plant											
9.	Any bypassing since last inspection?	YES								NO	✓	
10.	Is the standby electrical generator operational?	YES					✓	NO		NA		
	How often is the standby generator exercised?	monthly										
11.	Power transfer switch?	monthly			ALARM SYSTEM?	monthly						
12.	When was the cross connection last tested on the potable supply?								July 11, 2010			
13.	Is the STP alarm system operational?	YES					✓	NO		NA		
14.	Is sludge disposed in accordance with an approved SMP	YES					✓	NO		NA		
	Is septage received by the facility?	YES							✓	NO		
15.	Is septage loading controlled?	YES					✓	NO		NA		
	Are records maintained?	YES					✓	NO		NA		

OVERALL APPEARANCE OF FACILITY	GOOD	✓	AVERAGE		POOR	
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COMMENTS:	
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## PLANT RECORDS

WHICH OF THE FOLLOWING RECORDS DOES THE PLANT MAINTAIN?							
1.	Operational logs for each process unit	YES	✓	NO		NA	
	Instrument maintenance and calibration	YES	✓	NO		NA	
	Mechanical equipment maintenance	YES	✓	NO		NA	
	Industrial waste contribution (municipal facilities)	YES	✓	NO		NA	
WHAT DOES THE OPERATIONAL LOG CONTAIN							
2.	Visual Observations	✓	Flow Measurement	✓	Laboratory Results		✓
	Process Adjustments	✓	Control Calculations	✓	Other?		
COMMENTS:							
WHAT DO THE MECHANICAL EQUIPMENT RECORDS CONTAIN?							
3.	MFG. Instructions	✓	As Built Plans/specs	✓	Spare Parts Inventory		✓
	Lube Schedules	✓	Other?		Equipment/parts Suppliers		✓
COMMENTS:							
WHAT DO INDUSTRIAL WASTE CONTRIBUTION RECORDS CONTAIN? (MUNICIPAL)							
4.	Waste Characteristics	✓	Impact on Plant				✓
	Location and Discharge Types	✓	Other?				
COMMENTS:							
WHICH OF THE FOLLOWING RECORDS ARE AT THE PLANT & AVAILABLE TO PERSONNEL?							
5.	Equipment Maintenance Records	✓	Industrial Contributor Records				
	Operational Log	✓	Sampling/testing Records	✓	Instrumentation Records		
6.	Records not normally available to personnel at their location:	Industrial waste records located at main office					
7.	Were the records reviewed during the inspection	YES	✓	NO			
8.	Are records adequate and the O&M manual current?	YES	✓	NO			
9.	Are the records maintained for the required 3-year time period	YES	✓	NO			
COMMENTS:							

**SAMPLING**

1.	Are sampling locations capable of providing representative samples?	YES	✓	NO	
2.	Do sample types correspond to VPDES permit requirements?	YES	✓	NO	
3.	Do sampling frequencies correspond to VPDES permit requirements?	YES	✓	NO	
4.	Does plant maintain required records of sampling?	YES	✓	NO	
5.	Are composite samples collected in proportion to flow?	YES	✓	NO	NA
6.	Are composite samples refrigerated during collection?	YES	✓	NO	NA
7.	Does the plant run operational control tests?	YES	✓	NO	NA

COMMENTS:

**TESTING**

	Who performs the testing?	Plant	✓	Central Lab	✓	Commercial Lab	
1.	Name: <b>HRSD Central Laboratory</b>						

*IF THE PLANT PERFORMS ANY TESTING, PLEASE COMPLETE QUESTIONS 2-4*

2.	Which total residual chlorine method is used?	Hach colorimetric			
3.	Does plant appear to have sufficient equipment to perform required tests?	YES	✓	NO	
4.	Does testing equipment appear to be clean and/or operable?	YES	✓	NO	

COMMENTS:

**FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY**

1.	Is the production process as described in permit application? If no, describe changes in comments section.	YES		NO		NA	✓
2.	Are products/production rates as described in the permit application? If no list differences in comments section.	YES		NO		NA	✓
3.	Has the Agency been notified of the changes and their impact on plant effluent? Date agency notified:	YES		NO		NA	✓

COMMENTS:

PROBLEMS IDENTIFIED AT LAST INSPECTION		CORRECTED	NOT CORRECTED
	No problems identified at the last inspection.		

## SUMMARY

INSPECTION COMMENTS	
	Arrived on site and met with Plant Superintendent Phil Mason and Chief Operator Matt Williamson. A site survey was conducted with their assistance. No compliance issues were noted during the site survey. The facility appears clean and well managed. The activated sludge aeration tanks and the oxidation towers are being refurbished and/or upgraded. The aeration tank changes will improve nitrification by creating an anoxic zone in the tank by replacing a portion of the aeration system with a mixer unit (Photos 2-4).
COMPLIANCE RECOMMENDATIONS FOR ACTION	
	None at this time.

DEPARTMENT OF ENVIRONMENTAL QUALITY  
WASTEWATER FACILITY  
INSPECTION REPORT  
PART II

## Unit Process Evaluation Summary Sheet\*

UNIT PROCESS	APPLICABLE	COMMENTS
SEWAGE PUMPING		
FLOW MEASUREMENT	✓	
SCREENING/COMMINUTION	✓	
GRIT REMOVAL	✓	
PRIMARY SEDIMENTATION	✓	
ACTIVATED SLUDGE AERATION	✓	
TRICKLING FILTERS	✓	Oxidation Towers
SECONDARY SEDIMENTATION	✓	
CHLORINATION	✓	
DECHLORINATION	✓	
OZONATION		
ULTRAVIOLET DISINFECTION		
POST AERATION		
LAND APPLICATION-EFFLUENT		
EFFLUENT/PLANT OUTFALL	✓	
SLUDGE PUMPING	✓	
FLOTATION THICKENING (DAF)	✓	
GRAVITY THICKENING	✓	
AEROBIC DIGESTION		
ANAEROBIC DIGESTION		
LIME STABILIZATION		
CENTRIFUGATION	✓	
PRESSURE FILTRATION (SLUDGE)		
VACUUM FILTRATION		
DRYING BEDS		
THERMAL TREATMENT		
INCINERATION	✓	
COMPOSTING		
LAND APPLICATION-SLUDGE		

## STANDARD COMMENTS:

- |                                  |  |
|----------------------------------|--|
| 1. UNIT NEEDS ATTENTION          | 4. UNAPPROVED MODIFICATION OR TEMPORARY REPAIR |
| 2. ABNORMAL INFLUENT/EFFLUENT    | 5. EVIDENCE OF PROCESS UPSET                   |
| 3. EVIDENCE OF EQUIPMENT FAILURE |  |

\*REFER TO INDIVIDUAL UNIT PROCESS EVALUATION FORMS

UNIT PROCESS:

FLOW MEASUREMENT

INFLUENT		INTERMEDIATE		EFFLUENT		YES	NO	NA
1.	Type of measuring device	Parshall Flume						
2.	Present reading?	13.83MGD						
3.	Bypass channel						✓	
4.	Bypass channel metered?							✓
	Return flow discharged upstream of the meter?					✓		
5.	Identify:	Effluent of aerated grit tanks						
6.	Device operating properly?					✓		
7.	Date of last calibration?							
EVIDENCE OF THE FOLLOWING PROBLEMS								
	Obstruction?						✓	
8.	Grease?						✓	

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	
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## UNIT PROCESS:

SCREENINGS/COMMINUTION

YES

NO

NA

1.	Number of manual units	1					
2.	Number of mechanical units	3					
3.	Number manual units in operation	0					
4.	Number of mechanical units in operation	2					
	Bypass channel provided		✓				
5.	Bypass channel in use		✓				
6.	Area adequately ventilated		✓				
7.	Alarm system for equipment failure and/or overloads		✓				
8.	Proper flow distribution between units		✓				
9.	How often are units checked and cleaned	Weekly					
10.	Cycle of operation	Automatic					
11.	Volume of screenings removed March 2011	129 cu/ft					
GENERAL CONDITION:		GOOD	✓	FAIR		POOR	

## COMMENTS:

## UNIT PROCESS:

GRIT REMOVAL

YES

NO

NA

1.	Number of units	2					
2.	Number units in operation	1					
Operation of grit collection equipment:							
3.	Manual	Time Clock		✓	Continuous Duty		
4.	Area adequately ventilated		✓				
5.	Proper flow distribution between units				✓		
6.	Daily volume of grit removed March 2011	1 cu/ft day					
7.	All equipment operable		✓				
GENERAL CONDITION:		GOOD	✓	FAIR		POOR	

## COMMENTS:

Photo 1. Influent solids screens.



UNIT PROCESS:	SEDIMENTATION
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	PRIMARY	X	SECONDARY		TERTIARY			YES	NO	NA	
1.	Number of units				3						
2.	Number units in operation				2						
3.	Proper flow distribution between units							✓			
4.	Sludge collection system working properly?							✓			
5.	Signs of short circuiting and/or overloads									✓	
6.	Effluent weirs level									✓	
7.	Effluent weirs clean									✓	
8.	Scum collection system working properly									✓	
9.	Influent/effluent baffle system working properly									✓	
10.	Chemical Used		Ferric Chloride			Chemical Addition		✓			
11.	Effluent characteristics										✓
GENERAL CONDITION:		GOOD		1	FAIR			POOR			

COMMENTS:	#5 - #9, #11. Primary sedimentation units are covered. Photo 5.
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UNIT PROCESS:	SEDIMENTATION
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	PRIMARY		INTERMEDIATE	x	TERTIARY		YES	NO	NA
1.	Number of units				3				
2.	Number units in operation				1				
3.	Proper flow distribution between units								✓
4.	Sludge collection system working properly?						✓		
5.	Signs of short circuiting and/or overloads								✓
6.	Effluent weirs level								✓
7.	Effluent weirs clean								✓
8.	Scum collection system working properly								✓
9.	Influent/effluent baffle system working properly								✓
10.	Chemical Used					Chemical Addition		✓	
11.	Effluent characteristics								✓
GENERAL CONDITION:		GOOD		✓	FAIR			POOR	

COMMENTS:	#5 - #9, #11. Intermediate sedimentation units are covered.
-----------	---

UNIT PROCESS:

TRICKLING FILTER/OXIDATION TOWER

										YES	NO	NA
1.	Type of Filters	Low		High	x	Intermediate						
		Super High										
2.	Number of units	3										
3.	Number units in operation	1										
4.	OPERATION OF SYSTEM											
	SERIES		PARALLEL	✓	Other:							
5.	BIOMASS COLOR											
	Black		Brown		Green		Other: Not observed					
	EVIDENCE OF THE FOLLOWING PROBLEMS:											
	Uneven flow distribution?											✓
	Filter clogging (ponding)?											✓
	Nozzle clogging?											✓
	Icing?											✓
	Filter flies?											✓
6.	Vegetation on filter?											✓
7.	Recirculation pumps operating properly?									✓		
8.	Odors:	Septic		Earthy		None	✓	Other:				
9.	Recirculation rate:	28.43 MGD										
10.	Proper flow distribution between units?											✓
11.	Effluent characteristics?									Not observed		

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#6. Interior of towers were not observed. #9 - March 2011. Towers are being refurbished and media replaced. Photo 6.
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UNIT PROCESS:

ACTIVATED SLUDGE

								YES	NO	NA	
1.	Number of aeration units			4							
2.	Number units in operation			3							
3.	Mode of operation:			Conventional Plug Flow							
4.	Proper flow distribution between units							✓			
5.	Foam control operational							✓			
6.	Scum control present									✓	
7.	Dead spots								✓		
8.	Excessive foam								✓		
9.	Poor aeration								✓		
10.	Excessive scum								✓		
11.	Aeration equipment malfunction								✓		
12.	Other problem(s):								✓		
13.	Effluent control devices working properly (OXIDATION DITCHES)									✓	
14.	MIXED LIQUOR CHARACTERISTICS AS AVAILABLE:										
	pH (s.u.)	7.0	MLSS (mg/l)	3821	DO (mg/l)		SVI				67
	Odor		Settleability (ml/l)		30 min = 255 ml/l		SDI				
	Color	Brown									
15.	RETURN/WASTE SLUDGE RATES:										
	Return Rate	6.51 MGD	Waste Rate		Waste Frequency	Continuous					
16.	AERATION SYSTEM CONTROL:										
	Time Clock		Manual Feed		Continuous Feed	✓					
	Other:										

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#14 - #15 - March 2011.
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UNIT PROCESS:

SEDIMENTATION/FINAL CLARIFIERS

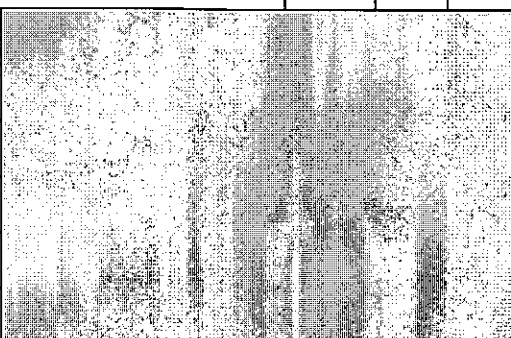
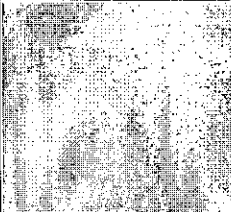
	PRIMARY		SECONDARY	✓	TERTIARY		YES	NO	NA
1.	Number of units				3				
2.	Number units in operation				2				
3.	Proper flow distribution between units						✓		
4.	Sludge collection system working properly?						✓		
5.	Signs of short circuiting and/or overloads							✓	
6.	Effluent weirs level						✓		
7.	Effluent weirs clean						✓		
8.	Scum collection system working properly						✓		
9.	Influent/effluent baffle system working properly						✓		
10.	Chemical Used	FERRIC CHLORIDE			Chemical Addition		✓		
11.	Effluent characteristics								
GENERAL CONDITION:		GOOD		✓	FAIR			POOR	

COMMENTS:

Average Ferric chloride addition was 2.7 mg/l for March 2011. Photo 8.

UNIT PROCESS:

CHLORINATION

				YES	NO	NA			
1.	Number of chlorinators	7							
2.	Number chlorinators in operation	1							
3.	Number of evaporators?	NA							
4.	Number of evaporators in operation	NA							
5.	Number chlorine contact tanks	4							
6.	Number chlorine contact tanks in operation	4							
7.	Proper flow distribution between units?			✓					
	HOW IS CHLORINE INTRODUCED INTO THE WASTE STREAM?								
8.	Perforated Diffuser		Injector w/single entry point				✓	Tablet Feeder	
9.	Chlorine residual in contact basin effluent (mg/l)								
10.	Applied chlorine dosage (lbs/day)		408						
11.	Contact basin adequately baffled?			✓					
12.	Adequate ventilation in chlorine cylinder storage area?					✓			
14.	Adequate ventilation in chlorine equipment room?			✓					
15.	Proper safety precautions used?			✓					

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#10- March 2011. Photo 7.
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UNIT PROCESS:

DECHLORINATION

						YES	NO	NA
1.	Dechlorination chemical used?							
	Sulfur Dioxide		Bisulfite	✓	Other:			
2.	Number of pumps				3			
3.	Number pumps in operation				1			
4.	Number of evaporators?				na			
5.	Number of evaporators in operation				na			
5.	Number contact tanks				2			
6.	Number contact tanks in operation				1			
7.	Proper flow distribution between units?							✓
8.	HOW IS CHEMICAL INTRODUCED INTO THE WASTE STREAM?							
	Perforated Diffuser	✓	Injector w/single entry point		Tablet Feeder			
9.	Chlorine residual in basin effluent				0.01 mg/l			
10.	Applied dechlorination dosage				200 lbs/day			
11.	Control system operational?							
12.	Control system adjusted?	Automatic	✓	Manual	Other:			
13.	Residual analyzer?					✓		
14.	Contact basin adequately baffled?					✓		
15.	Adequate ventilation in cylinder storage area?							✓
16.	Adequate ventilation in equipment room?					✓		
17.	Proper safety precautions used?					✓		

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#9-#10 - March 2011
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UNIT PROCESS:

GRAVITY BELT THICKENER

							YES	NO	NA
1.	Number of units			2					
2.	Number units in operation			1					
3.	Type of sludge treated:			Combination					
	Primary	<input checked="" type="checkbox"/>	Waste Activated		Other:				
4.	Sludge fed how?		Continuous	<input checked="" type="checkbox"/>	Intermittent				
5.	Solids concentration in the influent sludge				0.236%				
	Solids concentration in the thickened sludge				2.59%				
6.	Signs of short-circuiting and/or overloading?							<input checked="" type="checkbox"/>	
7.	Effluent weirs level?						<input checked="" type="checkbox"/>		
8.	Sludge collection system working properly?						<input checked="" type="checkbox"/>		
9.	Influent/effluent baffle systems working properly?						<input checked="" type="checkbox"/>		
10.	Chemical addition?						<input checked="" type="checkbox"/>		
	Chemical used?	DF-130		Dosage?	219 lbs/ton				

GENERAL CONDITION:	GOOD	<input checked="" type="checkbox"/>	FAIR		POOR	
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COMMENTS:	#5, #10 - March 2011. Photo 9.
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UNIT PROCESS:

CENTRIFUGATION

					YES	NO	NA
1.	Number of units		3				
2.	Number units in operation		1				
<b>PURPOSE OF CENTRIFUGE</b>							
3.	Thickening		Dewatering	✓	Other:		
<b>OPERATION OF EQUIPMENT</b>							
4.	Manual		Automatic	✓	Other:		
5.	Centrifuge run time		23 hours/day				
6.	Volume of influent sludge flow: (gal/min)		88				
7.	Amount of cake produced: (lbs/day)		31,2000				
<b>SLUDGE SOLIDS</b>							
8.	Influent (%)	3.29	Effluent (%)	28.4			
9.	Conditioning chemical fed:		DF-969				
10.	Conditioning chemical dose:		Varies w/chemical type				
11.	Centrate return location:		Trickling filter influent				
12.	Signs of centrate return problems?						✓

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#5-#9 - March 2011
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UNIT PROCESS:	INCINERATION
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							YES	NO	NA
1.	Method:	Multiple Hearth Furnace	✓	Fluidized Bed Incinerator					
2.	Number of units	2							
3.	Number units in operation	1							
4.	Types of sludge incinerated:								
	Primary	✓	Waste Activated	✓	Other:	✓			
5.	Loading rate (wet sludge)	30,400 lbs/day							
6.	Range of operating temperature	1374-1917 °F							
7.	Fuel used	Natural Gas	Amount	0-71,000 cu/ft day					
8.	Amount of ash generated	351 cu.yds	Disposal of ash						
9.	Average number of hours of operation per day	23							

GENERAL CONDITION:	GOOD	✓	FAIR		POOR	
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COMMENTS:	#5 - #8 - March 2011
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UNIT PROCESS:

EFFLUENT/PLANT OUTFALL

								YES	NO	NA
1.	Type of outfall	Shore Based			Submerged		✓			
TYPE IF SHORE BASED:										
2.	Wingwall		Headwall		Rip Rap		Pipe	✓		
3.	Flapper valve present?									✓
4.	Erosion of bank area?									✓
5.	Effluent plume visible?									✓
6.	Condition of outfall and the supporting structure?									
	GOOD		FAIR		POOR					
FINAL EFFLUENT, EVIDENCE OF FOLLOWING PROBLEMS?										
	Oil sheen?									✓
	Grease?									✓
	Sludge bar?									✓
	Turbid effluent?									✓
	Visible foam?									✓
7.	Unusual color?									✓

GENERAL CONDITION:	GOOD		FAIR		POOR	
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COMMENTS:	#6. Outfall structure is located in the James River.
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Photo 1. Influent screens.



Photo 2. Aeration tank without upgrade.

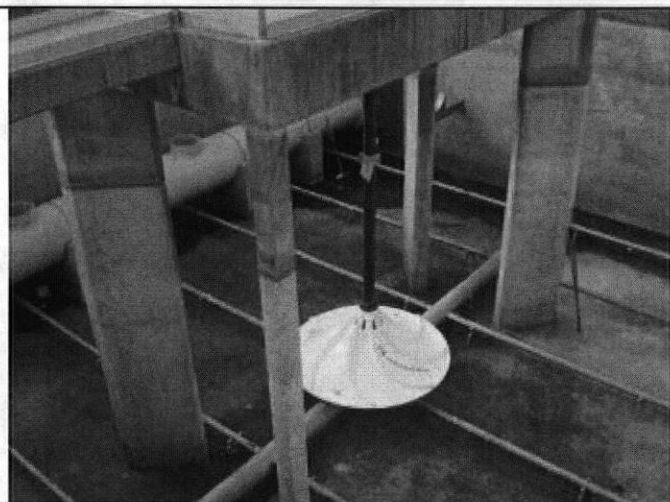


Photo 3. Mixer in place on empty aeration tank.

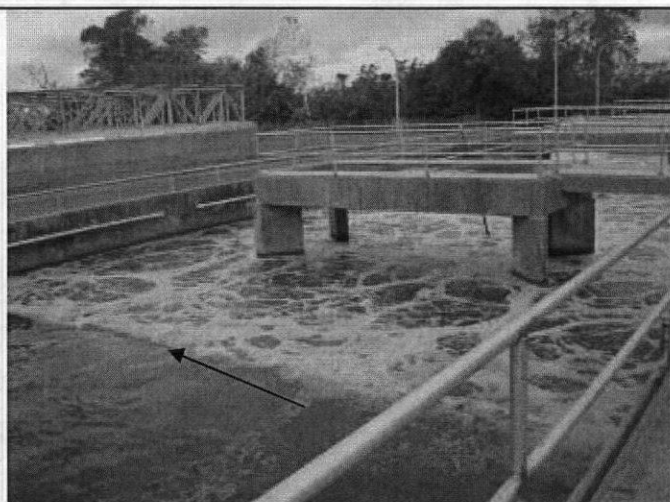


Photo 4. Upgraded aeration tank. Arrow indicates line between mixer and aeration zones.

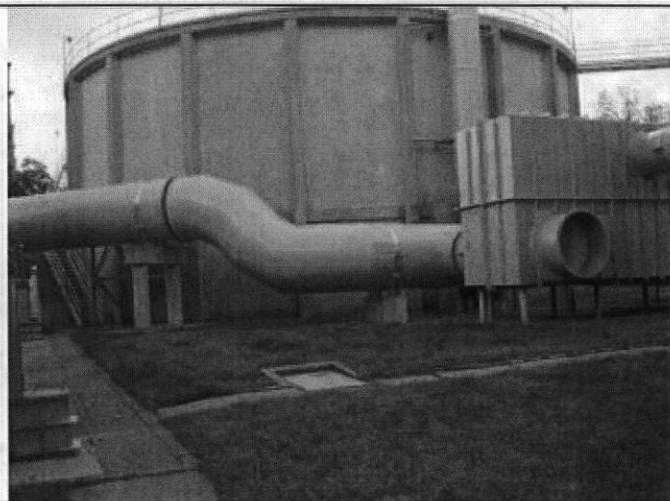
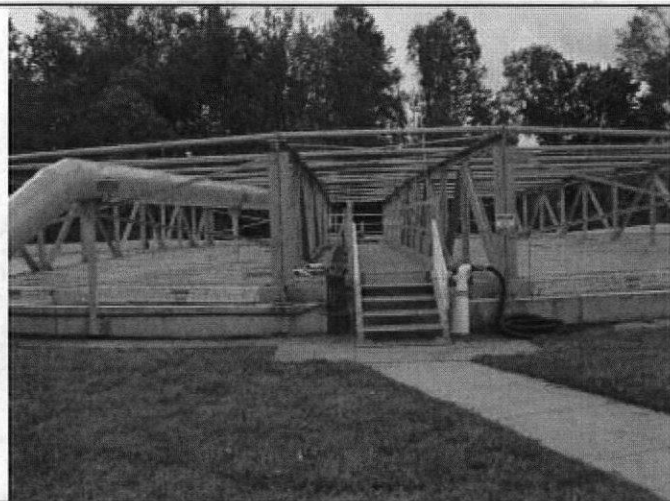


Photo 5. Primary clarifier.

Photo 6. Oxidation tower.

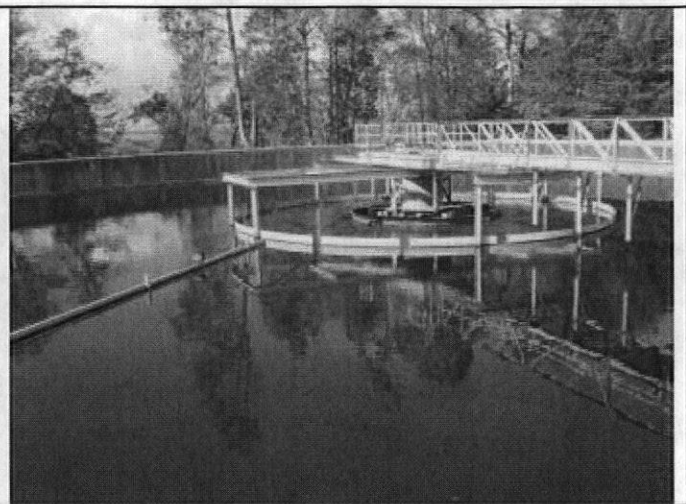


Photo 7. Chlorination contact chamber.

Photo 8. Final clarifier.

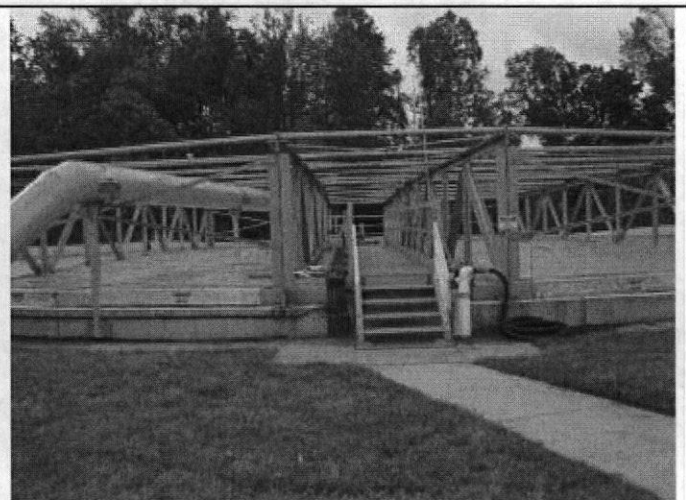
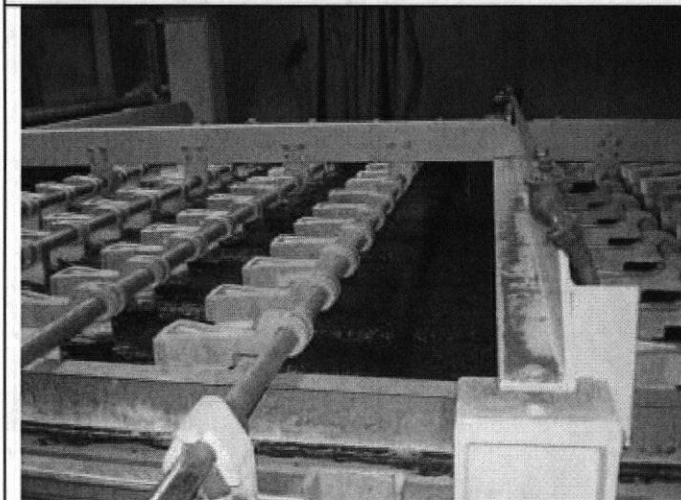


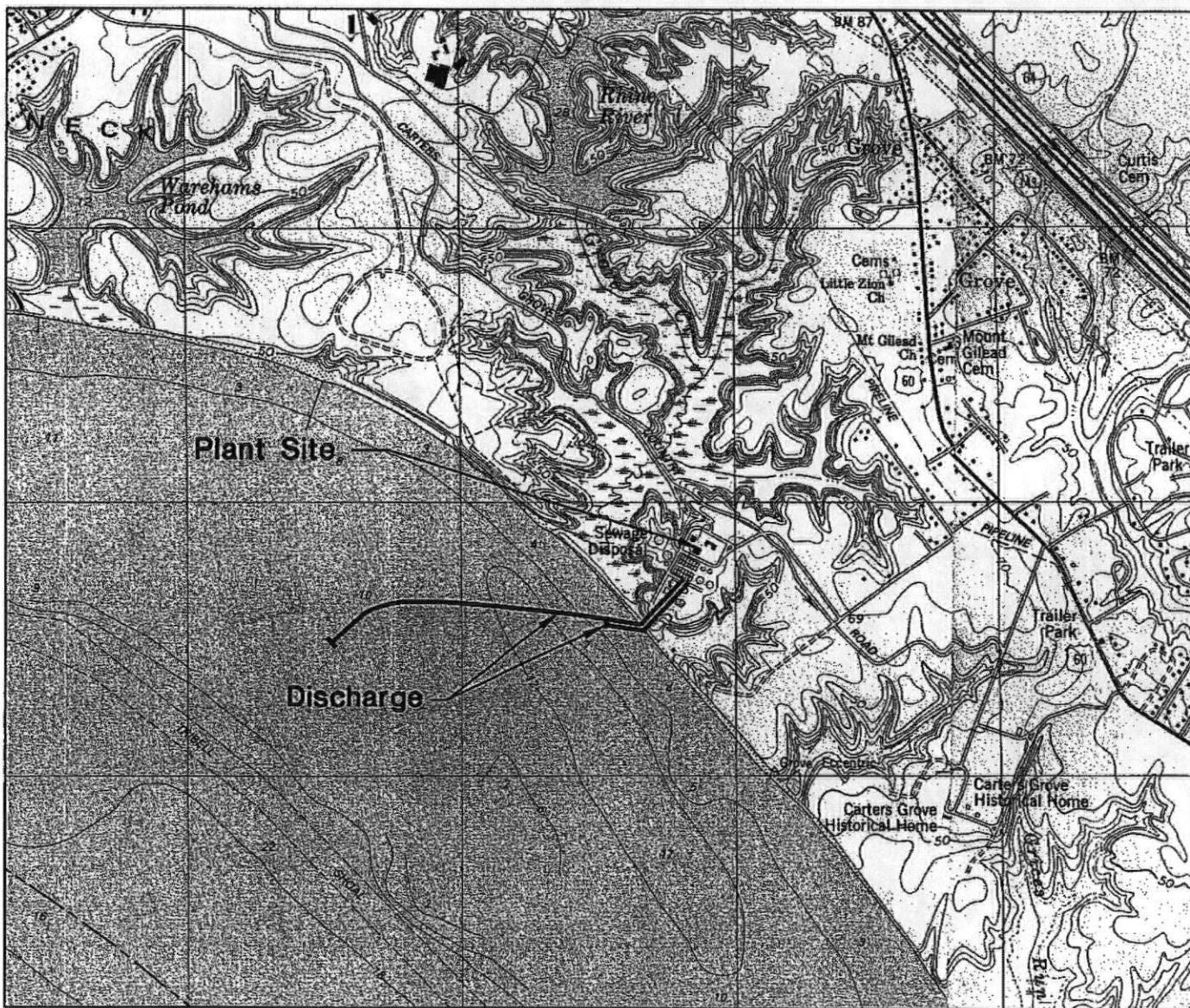
Photo 9. Gravity belt thickener.

Photo 10. Intermediate clarifier.

ATTACHMENT 2

DISCHARGE LOCATION/TOPOGRAPHIC MAP





Location Map  
for  
Williamsburg Treatment Plant

June 2003

Scale: 1"=2000'

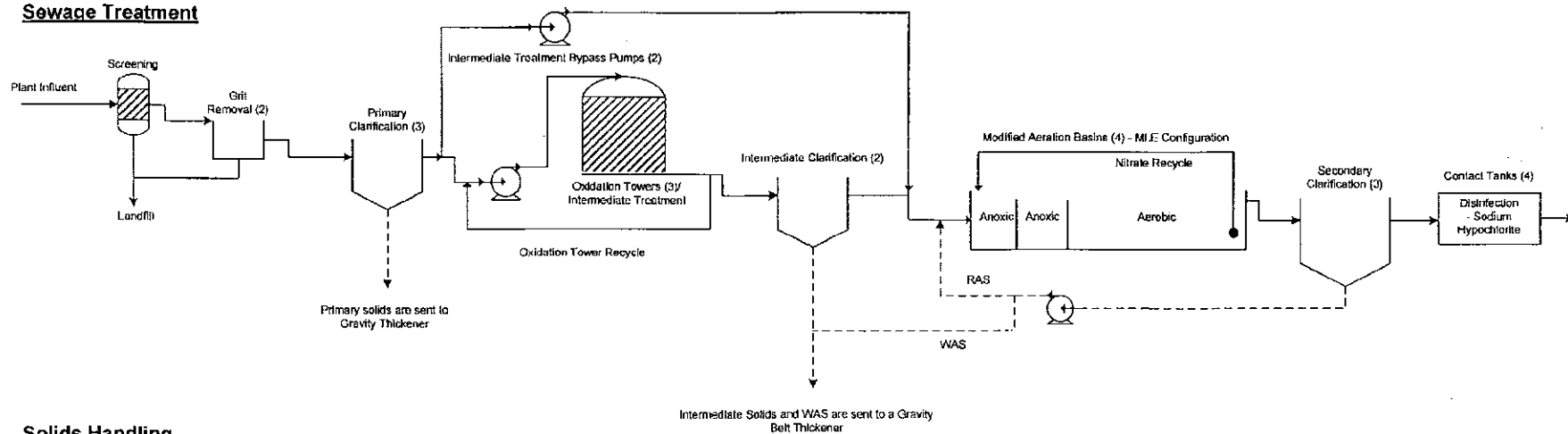
USGS Map Reference

ATTACHMENT 3

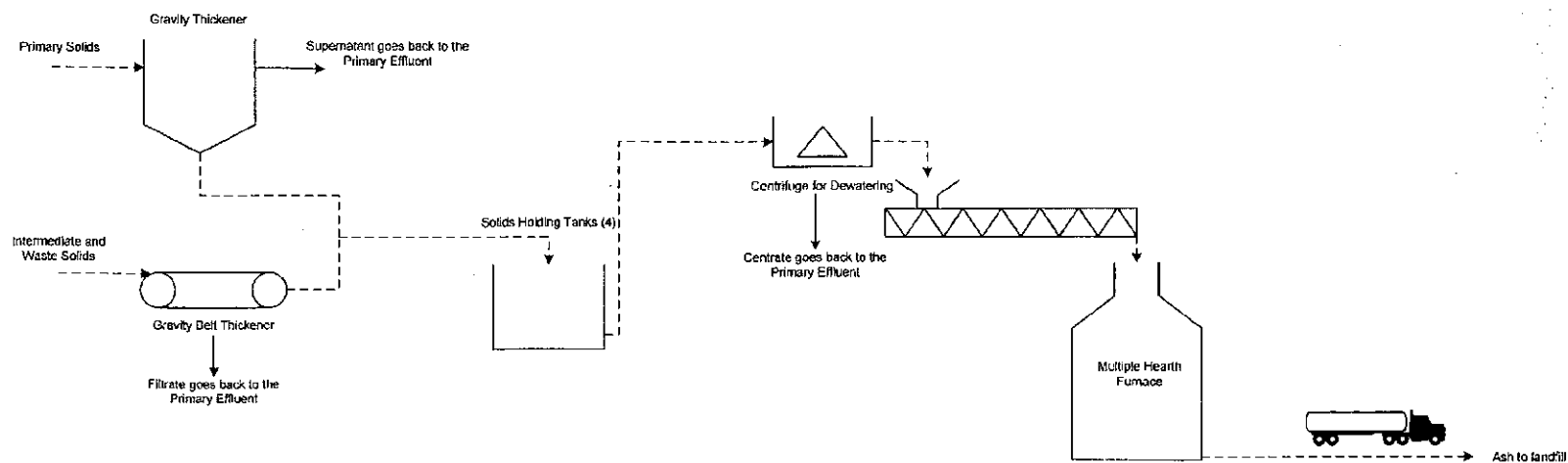
SCHEMATIC/PLANS & SPECS/SITE MAP/  
WATER BALANCE

# Williamsburg Wastewater Treatment Plant HRSD

## Sewage Treatment



## Solids Handling





ATTACHMENT 4

TABLE I - DISCHARGE/OUTFALL DESCRIPTION

TABLE I  
NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	371245N/ 0763860W	Publicly Owned Treatment works	Secondary treatment including bar screen, grit removal, primary clarification, secondary clarification, activated sludge, chlorination and dechlorination.	22.5 MGD
002	371231N/ 0763825W	POTW-Emergency Outfall	Fully treated-same as above	22.5 MGD
003	371257N 0763802W	Stormwater	Good housekeeping and management, containment of stored materials	0.003 MG
004	371256N 0763803W	Stormwater	Good housekeeping and management, containment of stored materials	0.002 MG
005	371251N 0763812W	Stormwater	Good housekeeping and management, containment of stored materials	0.0005 MG
006	371249N 0763812W	Stormwater	Good housekeeping and management, containment of stored materials	0.00004 MG
007	371240N 0763814W	Stormwater	Good housekeeping and management, containment of stored materials	0.0008 MG
008	371251N 0763813W	Stormwater	Good housekeeping and management, containment of stored materials	0.0008 MG
009	371253N 0763812W	Stormwater	Good housekeeping and management, containment of stored materials	0.003 MG
010	371257N 0763814W	Stormwater	Good housekeeping and management, containment of stored materials	0.004 MG
011	371301N 0763809W	Stormwater	Good housekeeping and management, containment of stored materials	0.008 MG
012	371300N 0763811W	Stormwater	Good housekeeping and management, containment of stored materials	0.004 MG

(1) List operations contributing to flow

(2) Give brief description, unit by unit

(3) Give maximum 30-day average flow for industry and design flow for municipal

Total for the 10 SW Outfalls 0.026 MG

## ATTACHMENT 5

### TABLE II - EFFLUENT MONITORING/LIMITATIONS

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 and 002[i] DESIGN FLOW: 22.5 MGD

Outfall Description: Municipal Discharge

SIC CODE: 4952

(X) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	DESIGN FLOW MULTIPLIER	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD) [a]	3		NL	NA	NA	NL	Cont.	TI & RE*
PH (S.U.)	1		NA	NA	6.0	9.0	1/Day	Grab
BOD5 (mg/l) [c] [d]	1		30	45	NA	NA	3/Week	24 HC
BOD5 (kg/d) [d]	1	22.5	2555	3832	NA	NA	3/Week	24 HC
TSS (mg/l) [c] [d]	1		30	45	NA	NA	3/Week	24 HC
TSS (kg/d) [d]	1	22.5	2555	3832	NA	NA	3/Week	24 HC
TRC (mg/l) [b] [c]	2		0.20	2.4	NA	NA	1/Day	Grab
Total Phosphorus (mg/l) [f]	3		NL	NA	NA	NA	1/Month	24 HC
Total Phosphorus (mg/l) Year to date [f]	3		NL	NA	NA	NA	1/Month	Calc
Total Phosphorus (mg/l) Calendar Year [e] [f]	3		2.0	NA	NA	NA	1/Year	Calc
Total Nitrogen (mg/l) [f]	3		NL	NA	NA	NA	1/Month	24 HC
Total Nitrogen (mg/l) Year to date [f]	3		NL	NA	NA	NA	1/Month	Calc
Total Nitrogen (mg/l) Calendar Year [e] [f]	3		14	NA	NA	NA	1/Year	Calc

PARAMETER & UNITS	BASIS FOR LIMITS	DESIGN FLOW MULTIPLIER	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Fecal Coliform (n/cml) [d] [g]	2		200	NA	NA	NA	1/Week (Between 10 am & 4 pm)	Grab
Enterococci (n/cml) [h]	2		35	NA	NA	NA	2/Month (Between 10 am & 4 pm)	Grab

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1 Year= January 1-December 31; reported for each full calendar year

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

In addition to any Total Nitrogen or Total Phosphorus concentration limits listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040090, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

- [a] The design flow of this treatment facility is 22.5 MGD. See Part I.C.5 for additional flow requirements.
- [b] See Part I.B. for additional chlorine monitoring instructions.
- [c] See Parts I.C.7 and I.C.8 for quantification levels and reporting requirements, respectively.
- [d] See Part I.C.9 for additional instructions regarding effluent monitoring frequencies.
- [e] Annual average limitation, based on a calculation of all samples collected during the calendar year.
- [f] See Part I.C.12 for additional instructions regarding Total Phosphorus and Total Nitrogen
- [g] Fecal Coliform monthly average is calculated as a geometric mean.
- [h] Enterococci monthly average is calculated as a geometric mean. Samples must be taken at least 7 days apart.
- [i] Monitoring for outfall 001 represents outfall 002. There is no Part I.A. reporting for 002. See Part I.C.6. for additional requirements for outfall 002.

- 2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- 3. At least 85% removal for BOD and TSS must be attained for this effluent.

The basis for the limitations codes are:

- 1. Technology (e.g., Federal Effluent Guidelines)
- 2. Water Quality Standards (9 VAC 25-260 et. seq.)
- 3. Best Professional Judgment

TABLE II - STORM WATER EFFLUENT LIMITATIONS/MONITORING

OUTFALLS #003-012

Outfall Description: Stormwater Not Associated With Regulated Industrial Activity

SIC CODE: 4952

THESE OUTFALLS SHALL CONTAIN STORM WATER RUNOFF NOT ASSOCIATED WITH A REGULATED INDUSTRIAL ACTIVITY WHERE NO MONITORING IS REQUIRED. THERE SHALL BE NO DISCHARGE OF PROCESS WASTEWATER FROM THESE OUTFALLS.

**No exposure status has been given to these outfalls.**

**TABLE II - MUNICIPAL MINOR EFFLUENT LIMITATIONS**

Attachment 5 continued

Final Chlorine Limitations Effective Dates - From: Permit Issuance

To: Permit Expiration

TRC **	AFTER CL2 CONTACT TANK (Dechlor. Required)			AFTER DECHLORINATION		AFTER CL2 CONTACT TANK (Dechlor. Not Required)				
	MIN.	EXC.	INST. MIN.	WKLY AVG.	INST. MAX.	PERMIT RANGE	EXC.	REPORT- ING RANGE	EXC.	TECH. MAX.
a) Non-Detect. Dechlor. Required	---	---	---	---	---	NA	NA	NA	NA	NA
b) Detect. Dechlor. Required	0.50 mg/l	36	0.5 mg/l*	2.4 mg/l	---	NA	NA	NA	NA	NA
c) No Dechlor.	NA	NA	NA	NA	NA	---	---	---	---	---

\* Reporting is required when 3 or more consecutive readings are <0.5 mg/l or when the TRC is <0.1 mg/l.

\*\* --Chlorine mass balance  $C_w$  (W for Tidal systems): check one

\_\_\_ a)  $C_w < 0.1$  mg/l [dechlor. required, non-detectable format]

X b)  $0.1 \text{ mg/l} \leq C_w < 2.0 \text{ mg/l}$  (2.5 mg/l for PWS, Shellfish waters) [dechlor. required, detectable format]

\_\_\_ c)  $C_w > 2.0$  mg/l (2.5 mg/l for PWS, Shellfish waters) [dechlor. not required, include a restrictive technology max. value]

The design flow of this treatment facility is 22.5 MGD.

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

See Part I.B. for additional TRC limitations.

ATTACHMENT 6

EFFLUENT LIMITATIONS/MONITORING  
RATIONALE/SUITABLE DATA/  
ANTIDEGRADATION/ANTIBACKSLIDING



HRSD Williamsburg STP  
Rationale For Parameters, Limitations, And Sampling Requirements  
Outfall 001/002

**Flow:** No limit, monitoring is required with continuous, totalizing, indicating or recording equipment. This based on the VPDES Permit Manual, and is standard for sanitary wastewater plants with discharges greater than 2 MGD. The design flow of 22.5 MGD is the baseline for the 95% design flow capacity notification.

**pH:** Minimum limit of 6.0 and maximum of 9.0 S.U. These limits are based on Federal Effluent Guidelines (40 CFR 133.102) and Water Quality Standards in 9 VAC 25-260-50, which limits pH to the range above for coastal waters of the State. Monitoring is a daily grab sample and is standard for sanitary WW plants with discharges greater than 2 MGD.

**Biochemical Oxygen Demand:** Monthly average of 30 mg/l and 2555 kg/day and a weekly average of 45 mg/l and 3832 kg/day. This is based on Federal Effluent Guidelines (40 CFR 133.102) which sets the limits for secondary WW plants. Loading limits are in whole numbers based upon the latest DEQ significant figures guidance (06-2016). Monitoring required is a 24 hour composite, 3 days a week. The frequency is based upon previous permit reissuances where DEQ guidance document 98-2005 was used to decrease the monitoring frequency to 3 days/week. This will be carried forward for this reissuance.

**Total Suspended Solids:** Monthly average of 30 mg/l and 2555 kg/day and a weekly average of 45 mg/l and 3832 kg/day. This is based on Federal Effluent Guidelines (40 CFR 133.102) which sets the limits for secondary WW plants. Loading limits are in whole numbers based upon the latest DEQ significant figures guidance (06-2016). Monitoring required is a 24 hour composite, 3 days a week. The frequency is based upon previous permit reissuances where DEQ guidance document 98-2005 was used to decrease the monitoring frequency to 3 days/week. This will be carried forward for this reissuance.

**Total Residual Contact Chlorine:** Minimum limit after contact time is 0.50 mg/l with 36 exceptions. This value was determined from the HRSD Chlorine Reduction Test which was approved by DEQ in February 1997. In addition, it follows the requirements of the VPDES permit manual. These process monitoring limits are believed necessary to ensure proper disinfection. Monitoring required is a grab sample once every two hours. This is based on the VPDES Permit Manual and is standard for municipal discharges of > 2.0 MGD to nutrient enriched waters.  
A special condition requires reporting if the chlorine concentration falls below 0.5 mg/l or chlorination is lost(<0.10 mg/l).

**Final Total Residual Chlorine:** A weekly average of 2.4 mg/l. A monthly average of 0.20 mg/l. This is a technology based limit following guidance document 00-2011 and is carried forward from the current permit. Monitoring is required once/day by grab sample. The frequency is based on the VPDES permit manual and is standard for municipal discharges of >2.0 MGD.

**Fecal Coliform:** Monthly average of 200 n/cml. This is based on Water Quality Standards (9 VAC 25-260-160) and is believed protective of instream standards. Monitoring required is a grab sample once a week. The VPDES Manual allows reduction to this frequency based on long term average discharge values in relation to the monthly average limit. Current guidance requires fecal coliform monitoring in salt or transition waters if the discharge is to shellfish waters. BPJ determines that this frequency is adequate to determine compliance with the standard.

**Enterococci:** A monthly average limit of 35 n/cml is included per water quality standards. Sampling is required 2/Month to be calculated as a geometric mean. Samples must be taken at least 7 days apart. This is carried forward from the current permit. Enterococci was added at the time the last permit reissuance due to Enterococci monitoring becoming an issue that EPA addressed in late 2007/early 2008.

**Total Phosphorus Calendar Year** An annual average concentration limit of 2.0 mg/l is placed in the permit with monitoring on an annual basis. Additional nutrient monitoring and reporting is covered under the General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus. The Williamsburg HRSD facility is covered under VAN040090. On 5/16/07 guidance document 07-2008 was released by DEQ Central Office for the implementation of the nutrient general permit in relation to the individual permit.

**Total Phosphorus Year-to-Date** There is no limit for the monthly average TP Year-to-date parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M and is a calculation. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed held by HRSD.

**Total Phosphorus** There is no limit for the monthly average phosphorus parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed. Reporting for this parameter is required in the individual permit (IP) because the annual concentration limits is contained in the IP. All data used to calculate and determine compliance with the limit in the IP needs to be in the same document and reported on the same form as the limit.

**Total Nitrogen Calendar Year** A limit of 14 mg/l will be added for Total Nitrogen as a final limit Part I Section C.4 of the permit states that upon issuance of a CTC, DEQ staff shall initiate modification of this permit to include annual concentrations limits based on the nutrient removal technologies listed in the

CTC. The CTC for this facility was issued on 7/19/11 by DEQ office of wastewater engineering staff. The permit was not modified at that time due to the proximity to permit reissuance. The CTO was issued on 3/9/12 and the limit becomes effective upon the reissuance date of this permit. The CTO is attached to this section.

**Total  
Nitrogen  
Year-to-Date**

There is no limit for the monthly average TN Year-to-date parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M and is a calculation. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed held by HRSD.

**Total  
Nitrogen**

There will be no limit for the monthly average nitrogen. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting will be 1/M. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed. Reporting for this parameter is required in the individual permit (IP) because the annual concentration limits is contained in the IP. All data used to calculate and determine compliance with the limit in the IP needs to be in the same document and reported on the same form as the limit.

**Water Quality Standards Reasonable Potential**

Nickel, Zinc, Chloroform, and Ammonia all had a quantifiable concentration for the data gathered for the 2012 application. However, these data points were significantly below the most limiting wasteload allocations found in the attached wasteload allocation analysis. No limits were needed for these parameters.

All other water quality parameters reported on Form 2A were below the quantification levels. No additional limits are needed at this time.

**Mixing Zone Analysis**

A dilution study was submitted for this facility on 7/13/99. The acute dilution ratio of 48:1 and a chronic dilution ratio of 95:1 were approved by DEQ.

**Stormwater**

Outfalls 003-012 are discharges of stormwater from the plant (industrial) area. One outfall (012) was sampled, as HRSD has claimed representative monitoring for the other stormwater outfalls. HRSD has met the requirements for industrial "no exposure", thereby only discharging stormwater not associated with an industrial activity. The "no exposure" certification form is attached to the section.

Williamsburg STP VA0081302 Storm Water Application Attachment

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (ft <sup>2</sup> )	Total Area Drained (ft <sup>2</sup> )	
003	42,300	49,200	.003
004	29,300	38,100	.002
005	6,200	8,200	.0005
006	540	540	.000004
007	11,100	11,100	.0008
008	6,900	13,900	.0008
009	29,400	55,000	.003
010	23,400	68,400	.004
011	80,900	118,100	.008
012	35,400	57,900	.004

.026

Spreadsheet can be  
requested via email.  
DDA

**VIRGINIA DEQ NO EXPOSURE CERTIFICATION  
FOR EXCLUSION FROM VPDES STORM WATER PERMITTING**

Submission of this **No Exposure Certification** constitutes notice that the entity identified below does not require permit authorization for its storm water discharges associated with industrial activity under the VPDES Permit Program due to the existence of a condition of **No Exposure**.

A condition of **No Exposure** exists at an industrial facility when all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. A storm resistant shelter is not required for the following industrial materials and activities:

- drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak. "Sealed" means banded or otherwise secured and without operational taps or valves;
- adequately maintained vehicles used in material handling; and
- final products, other than products that would be mobilized in storm water discharges (e.g., rock salt).

A No Exposure Certification must be provided for each facility qualifying for the No Exposure exclusion. In addition, the exclusion from VPDES permitting is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, the facility is not eligible for the No Exposure exclusion.

By signing and submitting this No Exposure Certification form, the entity below is certifying that a condition of No Exposure exists at its facility or site, and is obligated to comply with the terms and conditions at 9 VAC 25-31-120 E (the VPDES Permit Regulation).

Please Type or Print All Information. ALL INFORMATION ON THIS FORM MUST BE PROVIDED.

**1. Facility Operator Information**

Name: Hampton Roads Sanitation District

Mailing Address: 1436 Air Rail Avenue

City: Virginia Beach State: VA Zip: 23455 Phone: 757-460-2261

**2. Facility/Site Location Information**

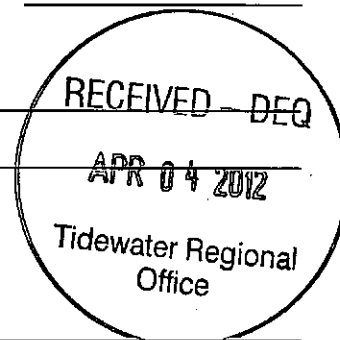
Facility Name: Williamsburg STP

Address: 300 Ron Springs Road

City: Williamsburg State: VA Zip: 23185

County Name: James City

Latitude: 37 131 00" Longitude: 76 38' 00"



**3. Was the facility or site previously covered under a VPDES storm water permit? Yes ☒ No ☐**

If "Yes", enter the VPDES permit number: VA0081302

**4. SIC/Activity Codes: Primary: 4952 Secondary (if applicable): \_\_\_\_\_**

**5. Total size of facility/site associated with industrial activity: 11.06 acres**

**6. Have you paved or roofed over a formerly exposed pervious area in order to qualify for the No Exposure exclusion? Yes ☐ No ☒**

If "Yes", please indicate approximately how much area was paved or roofed. Completing this question does not disqualify you for the No Exposure exclusion. However, DEQ may use this information in considering whether storm water discharges from your site are likely to have an adverse impact on water quality, in which case you could be required to obtain permit coverage.

Less than one acre ☐ One to five acres ☐ More than five acres ☐

## 7. Exposure Checklist

Are any of the following materials or activities exposed to precipitation, now or in the foreseeable future? (Please check either "Yes" or "No" in the appropriate box.) **If you answer "Yes" to any of these questions (1) through (11), you are not eligible for the No Exposure exclusion.**

	Yes	No
(1) Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(2) Materials or residuals on the ground or in storm water inlets from spill/leaks	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(3) Materials or products from past industrial activity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(4) Material handling equipment (except adequately maintained vehicles)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(5) Materials or products during loading/unloading or transporting activities	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(6) Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to storm water does not result in the discharge of pollutants)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(7) Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(8) Materials or products handled/stored on roads or railways owned or maintained by the discharger	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(9) Waste material (except waste in covered, non-leaking containers [e.g., dumpsters])	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(10) Application or disposal of process wastewater (unless otherwise permitted)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(11) Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the storm water outflow	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 8. Certification Statement

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of no exposure and obtaining an exclusion from VPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility identified in this document (except as allowed under 9 VAC 25-31-120 E 2).

I understand that I am obligated to submit a No Exposure Certification form once every five years to the Department of Environmental Quality and, if requested, to the operator of the local MS4 into which this facility discharges (where applicable). I understand that I must allow the Department, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under a VPDES permit prior to any point source discharge of storm water associated with industrial activity from the facility.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

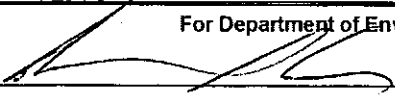
Print Name: Edward G. Henifin, P.E.

Print Title: General Manager

Signature: 

Date: 4/4/2012

For Department of Environmental Quality Use Only

Accepted/Not Accepted by: 

Date: 4/27/12

Permit No	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date	
VA0081302	BOD5	196	299		4	5	1-Feb-08	29-Feb-08	
VA0081302	BOD5	668	1313		12	25	1-Mar-08	31-Mar-08	
VA0081302	BOD5	226	246		4	3	1-Apr-08	30-Apr-08	
VA0081302	BOD5	137	163		2	3	1-May-08	31-May-08	
VA0081302	BOD5	154	194		3	3	1-Jun-08	30-Jun-08	
VA0081302	BOD5	105	148		2	3	1-Jul-08	31-Jul-08	
VA0081302	BOD5	104	146		2	3	1-Aug-08	31-Aug-08	
VA0081302	BOD5	56	91		1	2	1-Sep-08	30-Sep-08	
VA0081302	BOD5	5	0		0	0	1-Oct-08	31-Oct-08	
VA0081302	BOD5	58	77		1	2	1-Nov-08	30-Nov-08	
VA0081302	BOD5	115	162		2	3	1-Dec-08	31-Dec-08	
VA0081302	BOD5	138	189		3	4	1-Jan-09	31-Jan-09	
VA0081302	BOD5	148	196		3	5	1-Feb-09	28-Feb-09	
VA0081302	BOD5	271	437		5	8	1-Mar-09	31-Mar-09	
VA0081302	BOD5	201	294		5	7	1-Apr-09	30-Apr-09	
VA0081302	BOD5	173	248		4	5	1-May-09	31-May-09	
VA0081302	BOD5	132	144		3	4	1-Jun-09	30-Jun-09	
VA0081302	BOD5	118	162		3	4	1-Jul-09	31-Jul-09	
VA0081302	BOD5	122	160		3	4	1-Aug-09	31-Aug-09	
VA0081302	BOD5	143	257		4	5	1-Sep-09	30-Sep-09	
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VA0081302	BOD5	270	355		6	6	1-Dec-09	31-Dec-09	
VA0081302	BOD5	289	415		8	9	1-Jan-10	31-Jan-10	
VA0081302	BOD5	305	465		7	9	1-Feb-10	28-Feb-10	
VA0081302	BOD5	202	161		5	5	1-Mar-10	31-Mar-10	
VA0081302	BOD5	145	198		4	5	1-Apr-10	30-Apr-10	
VA0081302	BOD5	132	210		4	6	1-May-10	31-May-10	
VA0081302	BOD5	107	174		3	5	1-Jun-10	30-Jun-10	
VA0081302	BOD5	156	197		4	5	1-Jul-10	31-Jul-10	
VA0081302	BOD5	62	72		2	2	1-Aug-10	31-Aug-10	
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VA0081302	BOD5	171	195		6	7	1-Feb-11	28-Feb-11	
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VA0081302	BOD5	115	159		3	4	1-Nov-11	30-Nov-11	
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VA0081302	CL2 FINAL				0.0052	0.023	1-Jul-10	31-Jul-10	
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VA0081302	CL2 FINAL				0.012	0.030	1-Apr-11	30-Apr-11	
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VA0081302	CL2 FINAL				0.037	0.10	1-Jun-11	30-Jun-11	
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VA0081302	CL2 FINAL				0.0035	0.016	1-Oct-11	31-Oct-11	
VA0081302	CL2 FINAL				0.011	0.047	1-Nov-11	30-Nov-11	
VA0081302	CL2 FINAL				0.0032	0.014	1-Dec-11	31-Dec-11	
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VA0081302	FECAL				74		1-Sep-08	30-Sep-08	
VA0081302	FECAL				7		1-Oct-08	31-Oct-08	
VA0081302	FECAL				3		1-Nov-08	30-Nov-08	
VA0081302	FECAL				3		1-Dec-08	31-Dec-08	
VA0081302	FECAL				4		1-Jan-09	31-Jan-09	
VA0081302	FECAL				3		1-Feb-09	28-Feb-09	
VA0081302	FECAL				2		1-Mar-09	31-Mar-09	
VA0081302	FECAL				2		1-Apr-09	30-Apr-09	
VA0081302	FECAL				2		1-May-09	31-May-09	
VA0081302	FECAL				2		1-Jun-09	30-Jun-09	
VA0081302	FECAL				3		1-Jul-09	31-Jul-09	
VA0081302	FECAL				19		1-Aug-09	31-Aug-09	
VA0081302	FECAL				15		1-Sep-09	30-Sep-09	
VA0081302	FECAL				3		1-Oct-09	31-Oct-09	
VA0081302	FECAL				5		1-Nov-09	30-Nov-09	
VA0081302	FECAL				12		1-Dec-09	31-Dec-09	
VA0081302	FECAL				4		1-Jan-10	31-Jan-10	
VA0081302	FECAL				1		1-Feb-10	28-Feb-10	
VA0081302	FECAL				2		1-Mar-10	31-Mar-10	
VA0081302	FECAL				1		1-Apr-10	30-Apr-10	
VA0081302	FECAL				1		1-May-10	31-May-10	
VA0081302	FECAL				1		1-Jun-10	30-Jun-10	
VA0081302	FECAL				1		1-Jul-10	31-Jul-10	
VA0081302	FECAL				2		1-Aug-10	31-Aug-10	
VA0081302	FECAL				9		1-Sep-10	30-Sep-10	
VA0081302	FECAL				3		1-Oct-10	31-Oct-10	
VA0081302	FECAL				8		1-Nov-10	30-Nov-10	
VA0081302	FECAL				4		1-Dec-10	31-Dec-10	
VA0081302	FECAL				1		1-Jan-11	31-Jan-11	
VA0081302	FECAL				1		1-Feb-11	28-Feb-11	
VA0081302	FECAL				1		1-Mar-11	31-Mar-11	
VA0081302	FECAL				1		1-Apr-11	30-Apr-11	
VA0081302	FECAL				8		1-May-11	31-May-11	
VA0081302	FECAL				5		1-Jun-11	30-Jun-11	
VA0081302	FECAL				5		1-Jul-11	31-Jul-11	
VA0081302	FECAL				5		1-Aug-11	31-Aug-11	
VA0081302	FECAL				5		1-Sep-11	30-Sep-11	

VA0081302	FECAL				10		1-Oct-11	31-Oct-11	
VA0081302	FECAL				4		1-Nov-11	30-Nov-11	
VA0081302	FECAL				1		1-Dec-11	31-Dec-11	
VA0081302	FECAL				4		1-Jan-12	31-Jan-12	
VA0081302	FECAL				4		1-Feb-12	29-Feb-12	
VA0081302	FECAL				4		1-Mar-12	31-Mar-12	
VA0081302	ENTEROCOCCI				4		1-Jul-08	31-Jul-08	
VA0081302	ENTEROCOCCI				8		1-Aug-08	31-Aug-08	
VA0081302	ENTEROCOCCI				25		1-Sep-08	30-Sep-08	
VA0081302	ENTEROCOCCI				6		1-Oct-08	31-Oct-08	
VA0081302	ENTEROCOCCI				2		1-Nov-08	30-Nov-08	
VA0081302	ENTEROCOCCI				5		1-Dec-08	31-Dec-08	
VA0081302	ENTEROCOCCI				3		1-Jan-09	31-Jan-09	
VA0081302	ENTEROCOCCI				2		1-Feb-09	28-Feb-09	
VA0081302	ENTEROCOCCI				1		1-Mar-09	31-Mar-09	
VA0081302	ENTEROCOCCI				4		1-Apr-09	30-Apr-09	
VA0081302	ENTEROCOCCI				2		1-May-09	31-May-09	
VA0081302	ENTEROCOCCI				2		1-Jun-09	30-Jun-09	
VA0081302	ENTEROCOCCI				1		1-Jul-09	31-Jul-09	
VA0081302	ENTEROCOCCI				25		1-Aug-09	31-Aug-09	
VA0081302	ENTEROCOCCI				4		1-Sep-09	30-Sep-09	
VA0081302	ENTEROCOCCI				2		1-Oct-09	31-Oct-09	
VA0081302	ENTEROCOCCI				4		1-Nov-09	30-Nov-09	
VA0081302	ENTEROCOCCI				27		1-Dec-09	31-Dec-09	
VA0081302	ENTEROCOCCI				7		1-Jan-10	31-Jan-10	
VA0081302	ENTEROCOCCI				1		1-Feb-10	28-Feb-10	
VA0081302	ENTEROCOCCI				2		1-Mar-10	31-Mar-10	
VA0081302	ENTEROCOCCI				3		1-Apr-10	30-Apr-10	
VA0081302	ENTEROCOCCI				3		1-May-10	31-May-10	
VA0081302	ENTEROCOCCI				1		1-Jun-10	30-Jun-10	
VA0081302	ENTEROCOCCI				1		1-Jul-10	31-Jul-10	
VA0081302	ENTEROCOCCI				1		1-Aug-10	31-Aug-10	
VA0081302	ENTEROCOCCI				3		1-Sep-10	30-Sep-10	
VA0081302	ENTEROCOCCI				3		1-Oct-10	31-Oct-10	
VA0081302	ENTEROCOCCI				15		1-Nov-10	30-Nov-10	
VA0081302	ENTEROCOCCI				2		1-Dec-10	31-Dec-10	
VA0081302	ENTEROCOCCI				1		1-Jan-11	31-Jan-11	
VA0081302	ENTEROCOCCI				2		1-Feb-11	28-Feb-11	
VA0081302	ENTEROCOCCI				2		1-Mar-11	31-Mar-11	
VA0081302	ENTEROCOCCI				1		1-Apr-11	30-Apr-11	
VA0081302	ENTEROCOCCI				1		1-May-11	31-May-11	
VA0081302	ENTEROCOCCI				3		1-Jun-11	30-Jun-11	
VA0081302	ENTEROCOCCI				1		1-Jul-11	31-Jul-11	
VA0081302	ENTEROCOCCI				2		1-Aug-11	31-Aug-11	
VA0081302	ENTEROCOCCI				6		1-Sep-11	30-Sep-11	
VA0081302	ENTEROCOCCI				7		1-Oct-11	31-Oct-11	
VA0081302	ENTEROCOCCI				7		1-Nov-11	30-Nov-11	
VA0081302	ENTEROCOCCI				2		1-Dec-11	31-Dec-11	
VA0081302	ENTEROCOCCI				6		1-Jan-12	31-Jan-12	
VA0081302	ENTEROCOCCI				7		1-Feb-12	29-Feb-12	
VA0081302	ENTEROCOCCI				4		1-Mar-12	31-Mar-12	
VA0081302	FLOW	13.94	17.79				1-Feb-08	29-Feb-08	
VA0081302	FLOW	14.92	22.17				1-Mar-08	31-Mar-08	
VA0081302	FLOW	16.62	26.07				1-Apr-08	30-Apr-08	
VA0081302	FLOW	15.58	18.32				1-May-08	31-May-08	
VA0081302	FLOW	14.72	16.72				1-Jun-08	30-Jun-08	
VA0081302	FLOW	13.32	14.80				1-Jul-08	31-Jul-08	
VA0081302	FLOW	13.65	14.28				1-Aug-08	31-Aug-08	
VA0081302	FLOW	13.37	19.25				1-Sep-08	30-Sep-08	
VA0081302	FLOW	14.07	17.78				1-Oct-08	31-Oct-08	
VA0081302	FLOW	12.16	15.47				1-Nov-08	30-Nov-08	
VA0081302	FLOW	11.91	21.50				1-Dec-08	31-Dec-08	
VA0081302	FLOW	11.06	12.39				1-Jan-09	31-Jan-09	
VA0081302	FLOW	11.35	12.95				1-Feb-09	28-Feb-09	
VA0081302	FLOW	12.84	17.06				1-Mar-09	31-Mar-09	

VA0081302	FLOW	9.93	13.62				1-Apr-09	30-Apr-09
VA0081302	FLOW	10.15	14.35				1-May-09	31-May-09
VA0081302	FLOW	10.30	13.55				1-Jun-09	30-Jun-09
VA0081302	FLOW	10.42	13.81				1-Jul-09	31-Jul-09
VA0081302	FLOW	10.33	12.36				1-Aug-09	31-Aug-09
VA0081302	FLOW	9.57	20.43				1-Sep-09	30-Sep-09
VA0081302	FLOW	8.77	10.57				1-Oct-09	31-Oct-09
VA0081302	FLOW	10.51	29.10				1-Nov-09	30-Nov-09
VA0081302	FLOW	11.27	21.55				1-Dec-09	31-Dec-09
VA0081302	FLOW	9.47	16.99				1-Jan-10	31-Jan-10
VA0081302	FLOW	11.25	23.55				1-Feb-10	28-Feb-10
VA0081302	FLOW	10.59	20.96				1-Mar-10	31-Mar-10
VA0081302	FLOW	9.90	11.43				1-Apr-10	30-Apr-10
VA0081302	FLOW	8.68	11.16				1-May-10	31-May-10
VA0081302	FLOW	9.14	10.31				1-Jun-10	30-Jun-10
VA0081302	FLOW	9.67	11.03				1-Jul-10	31-Jul-10
VA0081302	FLOW	9.52	10.50				1-Aug-10	31-Aug-10
VA0081302	FLOW	9.10	26.53				1-Sep-10	30-Sep-10
VA0081302	FLOW	9.05	19.37				1-Oct-10	31-Oct-10
VA0081302	FLOW	7.72	8.98				1-Nov-10	30-Nov-10
VA0081302	FLOW	7.90	10.44				1-Dec-10	31-Dec-10
VA0081302	FLOW	7.98	10.17				1-Jan-11	31-Jan-11
VA0081302	FLOW	7.73	9.12				1-Feb-11	28-Feb-11
VA0081302	FLOW	8.45	11.30				1-Mar-11	31-Mar-11
VA0081302	FLOW	8.50	9.98				1-Apr-11	30-Apr-11
VA0081302	FLOW	8.43	9.51				1-May-11	31-May-11
VA0081302	FLOW	8.77	10.50				1-Jun-11	30-Jun-11
VA0081302	FLOW	10.29	20.44				1-Jul-11	31-Jul-11
VA0081302	FLOW	9.88	19.47				1-Aug-11	31-Aug-11
VA0081302	FLOW	10.65	14.94				1-Sep-11	30-Sep-11
VA0081302	FLOW	9.01	12.36				1-Oct-11	31-Oct-11
VA0081302	FLOW	8.96	13.81				1-Nov-11	30-Nov-11
VA0081302	FLOW	8.58	9.38				1-Dec-11	31-Dec-11
VA0081302	FLOW	8.07	9.91				1-Jan-12	31-Jan-12
VA0081302	FLOW	8.53	10.57				1-Feb-12	29-Feb-12
VA0081302	FLOW	9.09	10.37				1-Mar-12	31-Mar-12
VA0081302	PH			7.1		7.4	1-Feb-08	29-Feb-08
VA0081302	PH			7.0		7.4	1-Mar-08	31-Mar-08
VA0081302	PH			7.1		7.4	1-Apr-08	30-Apr-08
VA0081302	PH			7.1		7.4	1-May-08	31-May-08
VA0081302	PH			7.0		7.4	1-Jun-08	30-Jun-08
VA0081302	PH			6.9		7.5	1-Jul-08	31-Jul-08
VA0081302	PH			7.1		7.5	1-Aug-08	31-Aug-08
VA0081302	PH			7.0		7.4	1-Sep-08	30-Sep-08
VA0081302	PH			6.9		7.3	1-Oct-08	31-Oct-08
VA0081302	PH			7.0		7.3	1-Nov-08	30-Nov-08
VA0081302	PH			7.0		7.5	1-Dec-08	31-Dec-08
VA0081302	PH			7.2		7.4	1-Jan-09	31-Jan-09
VA0081302	PH			7.2		7.4	1-Feb-09	28-Feb-09
VA0081302	PH			6.8		7.3	1-Mar-09	31-Mar-09
VA0081302	PH			7.0		7.3	1-Apr-09	30-Apr-09
VA0081302	PH			6.9		7.3	1-May-09	31-May-09
VA0081302	PH			6.9		7.2	1-Jun-09	30-Jun-09
VA0081302	PH			6.6		7.2	1-Jul-09	31-Jul-09
VA0081302	PH			6.7		7.2	1-Aug-09	31-Aug-09
VA0081302	PH			6.8		7.2	1-Sep-09	30-Sep-09
VA0081302	PH			6.4		7.2	1-Oct-09	31-Oct-09
VA0081302	PH			6.6		7.1	1-Nov-09	30-Nov-09
VA0081302	PH			6.5		7.1	1-Dec-09	31-Dec-09
VA0081302	PH			6.4		7.0	1-Jan-10	31-Jan-10
VA0081302	PH			6.8		7.2	1-Feb-10	28-Feb-10
VA0081302	PH			6.8		7.3	1-Mar-10	31-Mar-10
VA0081302	PH			7.0		7.3	1-Apr-10	30-Apr-10
VA0081302	PH			6.5		7.3	1-May-10	31-May-10
VA0081302	PH			6.1		7.3	1-Jun-10	30-Jun-10

VA0081302	PH			7.0		7.4	1-Jul-10	31-Jul-10	
VA0081302	PH			6.9		7.2	1-Aug-10	31-Aug-10	
VA0081302	PH			6.4		7.2	1-Sep-10	30-Sep-10	
VA0081302	PH			6.5		7.2	1-Oct-10	31-Oct-10	
VA0081302	PH			6.5		7.2	1-Nov-10	30-Nov-10	
VA0081302	PH			6.9		7.2	1-Dec-10	31-Dec-10	
VA0081302	PH			6.9		7.2	1-Jan-11	31-Jan-11	
VA0081302	PH			6.9		7.2	1-Feb-11	28-Feb-11	
VA0081302	PH			6.8		7.2	1-Mar-11	31-Mar-11	
VA0081302	PH			6.7		7.1	1-Apr-11	30-Apr-11	
VA0081302	PH			6.7		7.2	1-May-11	31-May-11	
VA0081302	PH			6.7		7.2	1-Jun-11	30-Jun-11	
VA0081302	PH			6.3		7.4	1-Jul-11	31-Jul-11	
VA0081302	PH			6.5		7.2	1-Aug-11	31-Aug-11	
VA0081302	PH			6.5		7.3	1-Sep-11	30-Sep-11	
VA0081302	PH			6.7		7.3	1-Oct-11	31-Oct-11	
VA0081302	PH			6.7		7.0	1-Nov-11	30-Nov-11	
VA0081302	PH			6.5		7.2	1-Dec-11	31-Dec-11	
VA0081302	PH			6.4		7.4	1-Jan-12	31-Jan-12	
VA0081302	PH			7.0		7.3	1-Feb-12	29-Feb-12	
VA0081302	PH			7.0		7.3	1-Mar-12	31-Mar-12	
VA0081302	TP				0.31		1-Feb-08	29-Feb-08	
VA0081302	TP				1.9		1-Mar-08	31-Mar-08	
VA0081302	TP				0.26		1-Apr-08	30-Apr-08	
VA0081302	TP				0.88		1-May-08	31-May-08	
VA0081302	TP				1.6		1-Jun-08	30-Jun-08	
VA0081302	TP				0.75		1-Jul-08	31-Jul-08	
VA0081302	TP				0.52		1-Aug-08	31-Aug-08	
VA0081302	TP				1.8		1-Sep-08	30-Sep-08	
VA0081302	TP				1.9		1-Oct-08	31-Oct-08	
VA0081302	TP				1.4		1-Nov-08	30-Nov-08	
VA0081302	TP				0.39		1-Dec-08	31-Dec-08	
VA0081302	TP				0.25		1-Jan-09	31-Jan-09	
VA0081302	TP				0.44		1-Feb-09	28-Feb-09	
VA0081302	TP				1.2		1-Mar-09	31-Mar-09	
VA0081302	TP				1.2		1-Apr-09	30-Apr-09	
VA0081302	TP				1.8		1-May-09	31-May-09	
VA0081302	TP				2.0		1-Jun-09	30-Jun-09	
VA0081302	TP				2		1-Jul-09	31-Jul-09	
VA0081302	TP				0.98		1-Aug-09	31-Aug-09	
VA0081302	TP				1.5		1-Sep-09	30-Sep-09	
VA0081302	TP				0.96		1-Oct-09	31-Oct-09	
VA0081302	TP				1.2		1-Nov-09	30-Nov-09	
VA0081302	TP				0.87		1-Dec-09	31-Dec-09	
VA0081302	TP				0.78		1-Jan-10	31-Jan-10	
VA0081302	TP				0.51		1-Feb-10	28-Feb-10	
VA0081302	TP				0.37		1-Mar-10	31-Mar-10	
VA0081302	TP				1.0		1-Apr-10	30-Apr-10	
VA0081302	TP				1.5		1-May-10	31-May-10	
VA0081302	TP				1.3		1-Jun-10	30-Jun-10	
VA0081302	TP				0.94		1-Jul-10	31-Jul-10	
VA0081302	TP				0.86		1-Aug-10	31-Aug-10	
VA0081302	TP				2.5		1-Sep-10	30-Sep-10	
VA0081302	TP				0.21		1-Oct-10	31-Oct-10	
VA0081302	TP				0.68		1-Nov-10	30-Nov-10	
VA0081302	TP				1.1		1-Dec-10	31-Dec-10	
VA0081302	TP				1.4		1-Jan-11	31-Jan-11	
VA0081302	TP				1.6		1-Feb-11	28-Feb-11	
VA0081302	TP				1.3		1-Mar-11	31-Mar-11	
VA0081302	TP				1.6		1-Apr-11	30-Apr-11	
VA0081302	TP				0.48		1-May-11	31-May-11	
VA0081302	TP				1.1		1-Jun-11	30-Jun-11	
VA0081302	TP				2.7		1-Jul-11	31-Jul-11	
VA0081302	TP				0.50		1-Aug-11	31-Aug-11	
VA0081302	TP				0.69		1-Sep-11	30-Sep-11	

VA0081302	TP				0.17		1-Oct-11	31-Oct-11	
VA0081302	TP				1.0		1-Nov-11	30-Nov-11	
VA0081302	TP				1.5		1-Dec-11	31-Dec-11	
VA0081302	TP				0.67		1-Jan-12	31-Jan-12	
VA0081302	TP				0.88		1-Feb-12	29-Feb-12	
VA0081302	TP				0.88		1-Mar-12	31-Mar-12	
VA0081302	TP ANNUAL AVERAGE				0.98		1-Dec-08	31-Dec-08	
VA0081302	TP ANNUAL AVERAGE				1.2		1-Jan-09	31-Dec-09	
VA0081302	TP ANNUAL AVERAGE				0.98		1-Jan-10	31-Dec-10	
VA0081302	TP ANNUAL AVERAGE				1.2		1-Jan-11	31-Dec-11	
VA0081302	TP YTD				0.26		1-Feb-08	29-Feb-08	
VA0081302	TP YTD				0.79		1-Mar-08	31-Mar-08	
VA0081302	TP YTD				0.66		1-Apr-08	30-Apr-08	
VA0081302	TP YTD				0.70		1-May-08	31-May-08	
VA0081302	TP YTD				0.84		1-Jun-08	30-Jun-08	
VA0081302	TP YTD				0.83		1-Jul-08	31-Jul-08	
VA0081302	TP YTD				0.79		1-Aug-08	31-Aug-08	
VA0081302	TP YTD				0.90		1-Sep-08	30-Sep-08	
VA0081302	TP YTD				1.0		1-Oct-08	31-Oct-08	
VA0081302	TP YTD				1.0		1-Nov-08	30-Nov-08	
VA0081302	TP YTD				0.98		1-Dec-08	31-Dec-08	
VA0081302	TP YTD				0.25		1-Jan-09	31-Jan-09	
VA0081302	TP YTD				0.35		1-Feb-09	28-Feb-09	
VA0081302	TP YTD				0.63		1-Mar-09	31-Mar-09	
VA0081302	TP YTD				0.77		1-Apr-09	30-Apr-09	
VA0081302	TP YTD				0.97		1-May-09	31-May-09	
VA0081302	TP YTD				1.1		1-Jun-09	30-Jun-09	
VA0081302	TP YTD				1.2		1-Jul-09	31-Jul-09	
VA0081302	TP YTD				1.2		1-Aug-09	31-Aug-09	
VA0081302	TP YTD				1.2		1-Sep-09	30-Sep-09	
VA0081302	TP YTD				1.2		1-Oct-09	31-Oct-09	
VA0081302	TP YTD				1.2		1-Nov-09	30-Nov-09	
VA0081302	TP YTD				1.2		1-Dec-09	31-Dec-09	
VA0081302	TP YTD				0.78		1-Jan-10	31-Jan-10	
VA0081302	TP YTD				0.65		1-Feb-10	28-Feb-10	
VA0081302	TP YTD				0.55		1-Mar-10	31-Mar-10	
VA0081302	TP YTD				0.67		1-Apr-10	30-Apr-10	
VA0081302	TP YTD				0.84		1-May-10	31-May-10	
VA0081302	TP YTD				0.92		1-Jun-10	30-Jun-10	
VA0081302	TP YTD				0.92		1-Jul-10	31-Jul-10	
VA0081302	TP YTD				0.91		1-Aug-10	31-Aug-10	
VA0081302	TP YTD				1.1		1-Sep-10	30-Sep-10	
VA0081302	TP YTD				1.0		1-Oct-10	31-Oct-10	
VA0081302	TP YTD				0.97		1-Nov-10	30-Nov-10	
VA0081302	TP YTD				0.98		1-Dec-10	31-Dec-10	
VA0081302	TP YTD				1.4		1-Jan-11	31-Jan-11	
VA0081302	TP YTD				1.5		1-Feb-11	28-Feb-11	
VA0081302	TP YTD				1.4		1-Mar-11	31-Mar-11	
VA0081302	TP YTD				1.5		1-Apr-11	30-Apr-11	
VA0081302	TP YTD				1.3		1-May-11	31-May-11	
VA0081302	TP YTD				1.2		1-Jun-11	30-Jun-11	
VA0081302	TP YTD				1.4		1-Jul-11	31-Jul-11	
VA0081302	TP YTD				1.3		1-Aug-11	31-Aug-11	
VA0081302	TP YTD				1.3		1-Sep-11	30-Sep-11	
VA0081302	TP YTD				1.1		1-Oct-11	31-Oct-11	
VA0081302	TP YTD				1.1		1-Nov-11	30-Nov-11	
VA0081302	TP YTD				1.2		1-Dec-11	31-Dec-11	
VA0081302	TP YTD				0.67		1-Jan-12	31-Jan-12	
VA0081302	TP YTD				0.77		1-Feb-12	29-Feb-12	
VA0081302	TP YTD				0.81		1-Mar-12	31-Mar-12	
VA0081302	TSS	281	337		5.4	6.6	1-Feb-08	29-Feb-08	
VA0081302	TSS	798	1411		15	26	1-Mar-08	31-Mar-08	
VA0081302	TSS	231	288		3.7	4.5	1-Apr-08	30-Apr-08	
VA0081302	TSS	127	136		2.2	2.3	1-May-08	31-May-08	
VA0081302	TSS	158	182		2.8	3.2	1-Jun-08	30-Jun-08	

VA0081302	TSS	159	185		3.1	3.7	1-Jul-08	31-Jul-08	
VA0081302	TSS	169	230		3.3	4.4	1-Aug-08	31-Aug-08	
VA0081302	TSS	105	131		2.1	2.3	1-Sep-08	30-Sep-08	
VA0081302	TSS	149	177		2.8	3.2	1-Oct-08	31-Oct-08	
VA0081302	TSS	169	190		3.6	3.9	1-Nov-08	30-Nov-08	
VA0081302	TSS	151	230		3.3	4.3	1-Dec-08	31-Dec-08	
VA0081302	TSS	138	157		3.2	3.7	1-Jan-09	31-Jan-09	
VA0081302	TSS	144	220		3.4	5.2	1-Feb-09	28-Feb-09	
VA0081302	TSS	229	363		4.6	6.6	1-Mar-09	31-Mar-09	
VA0081302	TSS	200	278		5.2	6.6	1-Apr-09	30-Apr-09	
VA0081302	TSS	160	284		4.0	6.0	1-May-09	31-May-09	
VA0081302	TSS	92	104		2.4	2.6	1-Jun-09	30-Jun-09	
VA0081302	TSS	107	121		2.7	3.1	1-Jul-09	31-Jul-09	
VA0081302	TSS	135	173		3.5	4.7	1-Aug-09	31-Aug-09	
VA0081302	TSS	146	205		3.8	4.2	1-Sep-09	30-Sep-09	
VA0081302	TSS	133	145		4.1	4.5	1-Oct-09	31-Oct-09	
VA0081302	TSS	188	283		4.6	5.1	1-Nov-09	30-Nov-09	
VA0081302	TSS	218	290		5.0	5.3	1-Dec-09	31-Dec-09	
VA0081302	TSS	263	338		7.2	11	1-Jan-10	31-Jan-10	
VA0081302	TSS	264	400		6.1	7.9	1-Feb-10	28-Feb-10	
VA0081302	TSS	155	139		3.8	4.0	1-Mar-10	31-Mar-10	
VA0081302	TSS	123	143		3.4	3.9	1-Apr-10	30-Apr-10	
VA0081302	TSS	118	164		3.6	4.9	1-May-10	31-May-10	
VA0081302	TSS	117	132		3.4	4.0	1-Jun-10	30-Jun-10	
VA0081302	TSS	99	125		2.7	3.3	1-Jul-10	31-Jul-10	
VA0081302	TSS	91	97		2.5	2.7	1-Aug-10	31-Aug-10	
VA0081302	TSS	306	119		5.6	4.1	1-Sep-10	30-Sep-10	
VA0081302	TSS	126	150		3.8	4.4	1-Oct-10	31-Oct-10	
VA0081302	TSS	92	105		3.1	3.6	1-Nov-10	30-Nov-10	
VA0081302	TSS	110	126		3.6	4.1	1-Dec-10	31-Dec-10	
VA0081302	TSS	161	219		5.3	6.9	1-Jan-11	31-Jan-11	
VA0081302	TSS	172	179		6.0	6.4	1-Feb-11	28-Feb-11	
VA0081302	TSS	182	259		5.6	6.9	1-Mar-11	31-Mar-11	
VA0081302	TSS	192	244		6.0	6.9	1-Apr-11	30-Apr-11	
VA0081302	TSS	92	129		2.9	4.0	1-May-11	31-May-11	
VA0081302	TSS	98	115		2.9	3.6	1-Jun-11	30-Jun-11	
VA0081302	TSS	174	269		4.6	6.6	1-Jul-11	31-Jul-11	
VA0081302	TSS	125	155		3.4	4.7	1-Aug-11	31-Aug-11	
VA0081302	TSS	165	220		4.2	6.0	1-Sep-11	30-Sep-11	
VA0081302	TSS	74	90		2.2	2.6	1-Oct-11	31-Oct-11	
VA0081302	TSS	116	131		3.3	3.6	1-Nov-11	30-Nov-11	
VA0081302	TSS	378	692		12	22	1-Dec-11	31-Dec-11	
VA0081302	TSS	143	185		4.7	6.0	1-Jan-12	31-Jan-12	
VA0081302	TSS	148	175		4.6	5.0	1-Feb-12	29-Feb-12	
VA0081302	TSS	180	206		5.3	5.9	1-Mar-12	31-Mar-12	

Data pulled from  
Discoverer 4/27/12  
DDH

# SALTWATER AND TRANSITION ZONES

## WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: HRSD Williamsburg STP  
Receiving Stream: James River

Permit No.: VA0081302

Version: OWP Guidance Memo 00-2011 (8/24/00)

### Stream Information

Mean Hardness (as CaCO<sub>3</sub>) = 26.2 mg/l  
90th % Temperature (Annual) = 26.2 °C  
90th % Temperature (Winter) = 20 °C  
90th % Maximum pH = 7.91  
10th % Maximum pH = 7.5  
Tier Designation (1 or 2) = 1  
Early Life Stages Present Y/N = Y  
Tidal Zone = 1 (1 = saltwater, 2 = transition zone)  
Mean Salinity = 6 (g/kg)

### Mixing Information

Design Flow (MGD) = 22.5  
Acute WLA multiplier = 48  
Chronic WLA multiplier = 95  
Human health WLA multiplier = 95

### Effluent Information

Mean Hardness (as CaCO<sub>3</sub>) = 84.8 mg/L  
90 % Temperature (Annual) = 20 °C  
90 % Temperature (Winter) = 20 °C  
90 % Maximum pH = 7.4 SU  
10 % Maximum pH = 7.18 SU  
Discharge Flow = 22.5 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Acenaphthene	0	--	--	9.9E+02	--	--	9.4E+04	--	--	--	--	--	--	--	--	9.4E+04
Acrolein	0	--	--	9.3E+00	--	--	8.8E+02	--	--	--	--	--	--	--	--	8.8E+02
Acrylonitrile <sup>C</sup>	0	--	--	2.5E+00	--	--	2.4E+02	--	--	--	--	--	--	--	--	2.4E+02
Aldrin <sup>C</sup>	0	1.3E+00	--	5.0E-04	6.2E+01	--	4.8E-02	--	--	--	--	--	--	6.2E+01	--	4.8E-02
Ammonia-N (mg/l) - Annual	0	4.48E+00	6.46E-01	--	2.15E+02	6.14E+01	--	--	--	--	--	--	--	2.15E+02	6.14E+01	--
Ammonia-N (mg/l) - Winter	0	2.84E+01	4.23E+00	--	1.36E+03	4.02E+02	--	--	--	--	--	--	--	1.36E+03	4.02E+02	--
Anthracene	0	--	--	4.0E+04	--	--	3.8E+06	--	--	--	--	--	--	--	--	3.8E+06
Antimony	0	--	--	6.4E+02	--	--	6.1E+04	--	--	--	--	--	--	--	--	6.1E+04
Arsenic	0	6.9E+01	3.6E+01	--	3.3E+03	3.4E+03	--	--	--	--	--	--	--	3.3E+03	3.4E+03	--
Benzene <sup>C</sup>	0	--	--	5.1E+02	--	--	4.8E+04	--	--	--	--	--	--	--	--	4.8E+04
Benzidine <sup>C</sup>	0	--	--	2.0E-03	--	--	1.9E-01	--	--	--	--	--	--	--	--	1.9E-01
Benzo (a) anthracene <sup>C</sup>	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
Benzo (a) pyrene <sup>C</sup>	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
Bis(2-Chloroethyl) Ether <sup>C</sup>	0	--	--	5.3E+00	--	--	5.0E+02	--	--	--	--	--	--	--	--	5.0E+02
Bis(2-Chloroisopropyl) Ether	0	--	--	6.5E+04	--	--	6.2E+06	--	--	--	--	--	--	--	--	6.2E+06
Bis(2-Ethylhexyl) Phthalate <sup>C</sup>	0	--	--	2.2E+01	--	--	2.1E+03	--	--	--	--	--	--	--	--	2.1E+03
Bromoform <sup>C</sup>	0	--	--	1.4E+03	--	--	1.3E+05	--	--	--	--	--	--	--	--	1.3E+05
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	1.8E+05	--	--	--	--	--	--	--	--	1.8E+05
Cadmium	0	4.0E+01	8.8E+00	--	1.9E+03	8.4E+02	--	--	--	--	--	--	--	1.9E+03	8.4E+02	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	1.6E+01	--	--	1.5E+03	--	--	--	--	--	--	--	--	1.5E+03
Chlordane <sup>C</sup>	0	9.0E-02	4.0E-03	8.1E-03	4.3E+00	3.8E-01	7.7E-01	--	--	--	--	--	--	4.3E+00	3.8E-01	7.7E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
TRC	0			--			--	--	--	--	--	--	--	--	--	--
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	6.2E+02	7.1E+02	--	--	--	--	--	--	--	6.2E+02	7.1E+02	--
Chlorobenzene		--	--	1.6E+03	--	--	1.5E+05	--	--	--	--	--	--	--	--	1.5E+05
Chlorodibromomethane <sup>c</sup>	0	--	--	1.3E+02	--	--	1.2E+04	--	--	--	--	--	--	--	--	1.2E+04
Chloroform	0	--	--	1.1E+04	--	--	1.0E+06	--	--	--	--	--	--	--	--	1.0E+06
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	1.5E+05	--	--	--	--	--	--	--	--	1.5E+05
2-Chlorophenol	0	--	--	1.5E+02	--	--	1.4E+04	--	--	--	--	--	--	--	--	1.4E+04
Chlorpyrifos	0	1.1E-02	5.6E-03	--	5.3E-01	5.3E-01	--	--	--	--	--	--	--	5.3E-01	5.3E-01	--
Chromium III	0			--			--	--	--	--	--	--	--	--	--	--
Chromium VI	0	1.1E+03	5.0E+01	--	5.3E+04	4.8E+03	--	--	--	--	--	--	--	5.3E+04	4.8E+03	--
Chrysene <sup>c</sup>	0	--	--	1.8E-02	--	--	1.7E+00	--	--	--	--	--	--	--	--	1.7E+00
Copper	0	9.3E+00	6.0E+00	--	4.5E+02	5.7E+02	--	--	--	--	--	--	--	4.5E+02	5.7E+02	--
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	4.8E+01	9.5E+01	1.5E+06	--	--	--	--	--	--	4.8E+01	9.5E+01	1.5E+06
DDD <sup>c</sup>	0	--	--	3.1E-03	--	--	2.9E-01	--	--	--	--	--	--	--	--	2.9E-01
DDE <sup>c</sup>	0	--	--	2.2E-03	--	--	2.1E-01	--	--	--	--	--	--	--	--	2.1E-01
DDT <sup>c</sup>	0	1.3E-01	1.0E-03	2.2E-03	6.2E+00	9.5E-02	2.1E-01	--	--	--	--	--	--	6.2E+00	9.5E-02	2.1E-01
Demeton	0	--	1.0E-01	--	--	9.5E+00	--	--	--	--	--	--	--	--	9.5E+00	--
Diazinon	0	8.2E-01	8.2E-01	--	3.9E+01	7.8E+01	--	--	--	--	--	--	--	3.9E+01	7.8E+01	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	1.2E+05	--	--	--	--	--	--	--	--	1.2E+05
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	9.1E+04	--	--	--	--	--	--	--	--	9.1E+04
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	1.8E+04	--	--	--	--	--	--	--	--	1.8E+04
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	2.8E-01	--	--	2.7E+01	--	--	--	--	--	--	--	--	2.7E+01
Dichlorobromomethane <sup>c</sup>	0	--	--	1.7E+02	--	--	1.6E+04	--	--	--	--	--	--	--	--	1.6E+04
1,2-Dichloroethane <sup>c</sup>	0	--	--	3.7E+02	--	--	3.5E+04	--	--	--	--	--	--	--	--	3.5E+04
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	6.7E+05	--	--	--	--	--	--	--	--	6.7E+05
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	9.5E+05	--	--	--	--	--	--	--	--	9.5E+05
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	2.8E+04	--	--	--	--	--	--	--	--	2.8E+04
1,2-Dichloropropane <sup>c</sup>	0	--	--	1.5E+02	--	--	1.4E+04	--	--	--	--	--	--	--	--	1.4E+04
1,3-Dichloropropene <sup>c</sup>	0	--	--	2.1E+02	--	--	2.0E+04	--	--	--	--	--	--	--	--	2.0E+04
Dieldrin <sup>c</sup>	0	7.1E-01	1.9E-03	5.4E-04	3.4E+01	1.8E-01	5.1E-02	--	--	--	--	--	--	3.4E+01	1.8E-01	5.1E-02
Diethyl Phthalate	0	--	--	4.4E+04	--	--	4.2E+06	--	--	--	--	--	--	--	--	4.2E+06
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	8.1E+04	--	--	--	--	--	--	--	--	8.1E+04
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	1.0E+08	--	--	--	--	--	--	--	--	1.0E+08
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	4.3E+05	--	--	--	--	--	--	--	--	4.3E+05
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	5.0E+05	--	--	--	--	--	--	--	--	5.0E+05
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	2.7E+04	--	--	--	--	--	--	--	--	2.7E+04
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	3.4E+01	--	--	3.2E+03	--	--	--	--	--	--	--	--	3.2E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.1E-08	--	--	4.8E-06	--	--	--	--	--	--	--	--	4.8E-06
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	2.0E+00	--	--	1.9E+02	--	--	--	--	--	--	--	--	1.9E+02
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	1.6E+00	8.3E-01	8.5E+03	--	--	--	--	--	--	1.6E+00	8.3E-01	8.5E+03



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	1.6E+00	8.3E-01	8.5E+03	--	--	--	--	--	--	1.6E+00	8.3E-01	8.5E+03
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	1.6E+00	8.3E-01	--	--	--	--	--	--	--	1.6E+00	8.3E-01	--
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	8.5E+03	--	--	--	--	--	--	--	--	8.5E+03
Endrin	0	3.7E-02	2.3E-03	6.0E-02	1.8E+00	2.2E-01	5.7E+00	--	--	--	--	--	--	1.8E+00	2.2E-01	5.7E+00
Endrin Aldehyde	0	--	--	3.0E-01	--	--	2.9E+01	--	--	--	--	--	--	--	--	2.9E+01
Ethylbenzene	0	--	--	2.1E+03	--	--	2.0E+05	--	--	--	--	--	--	--	--	2.0E+05
Fluoranthene	0	--	--	1.4E+02	--	--	1.3E+04	--	--	--	--	--	--	--	--	1.3E+04
Fluorene	0	--	--	5.3E+03	--	--	5.0E+05	--	--	--	--	--	--	--	--	5.0E+05
Guthion	0	--	1.0E-02	--	--	9.5E-01	--	--	--	--	--	--	--	--	9.5E-01	--
Heptachlor <sup>C</sup>	0	5.3E-02	3.6E-03	7.9E-04	2.5E+00	3.4E-01	7.5E-02	--	--	--	--	--	--	2.5E+00	3.4E-01	7.5E-02
Heptachlor Epoxide <sup>C</sup>	0	5.3E-02	3.6E-03	3.9E-04	2.5E+00	3.4E-01	3.7E-02	--	--	--	--	--	--	2.5E+00	3.4E-01	3.7E-02
Hexachlorobenzene <sup>C</sup>	0	--	--	2.9E-03	--	--	2.8E-01	--	--	--	--	--	--	--	--	2.8E-01
Hexachlorobutadiene <sup>C</sup>	0	--	--	1.8E+02	--	--	1.7E+04	--	--	--	--	--	--	--	--	1.7E+04
Hexachlorocyclohexane Alpha-BHC <sup>C</sup>	0	--	--	4.9E-02	--	--	4.7E+00	--	--	--	--	--	--	--	--	4.7E+00
Hexachlorocyclohexane Beta-BHC <sup>C</sup>	0	--	--	1.7E-01	--	--	1.6E+01	--	--	--	--	--	--	--	--	1.6E+01
Hexachlorocyclohexane Gamma-BHC <sup>C</sup> (Lindane)	0	1.6E-01	--	1.8E+00	7.7E+00	--	1.7E+02	--	--	--	--	--	--	7.7E+00	--	1.7E+02
Hexachlorocyclopentadiene	0	--	--	1.1E+03	--	--	1.0E+05	--	--	--	--	--	--	--	--	1.0E+05
Hexachloroethane <sup>C</sup>	0	--	--	3.3E+01	--	--	3.1E+03	--	--	--	--	--	--	--	--	3.1E+03
Hydrogen Sulfide	0	--	2.0E+00	--	--	1.9E+02	--	--	--	--	--	--	--	--	1.9E+02	--
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	1.7E+01	--	--	--	--	--	--	--	--	1.7E+01
Isophorane <sup>C</sup>	0	--	--	9.6E+03	--	--	9.1E+05	--	--	--	--	--	--	--	--	9.1E+05
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Lead	0	2.4E+02	9.3E+00	--	1.2E+04	8.8E+02	--	--	--	--	--	--	--	1.2E+04	8.8E+02	--
Malathion	0	--	1.0E-01	--	--	9.5E+00	--	--	--	--	--	--	--	--	9.5E+00	--
Mercury	0	1.8E+00	9.4E-01	--	8.6E+01	8.9E+01	--	--	--	--	--	--	--	8.6E+01	8.9E+01	--
Methyl Bromide	0	--	--	1.5E+03	--	--	1.4E+05	--	--	--	--	--	--	--	--	1.4E+05
Methylene Chloride <sup>C</sup>	0	--	--	5.9E+03	--	--	5.6E+05	--	--	--	--	--	--	--	--	5.6E+05
Methoxychlor	0	--	3.0E-02	--	--	2.9E+00	--	--	--	--	--	--	--	--	2.9E+00	--
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Nickel	0	7.4E+01	8.2E+00	4.6E+03	3.6E+03	7.8E+02	4.4E+05	--	--	--	--	--	--	3.6E+03	7.8E+02	4.4E+05
Nitrobenzene	0	--	--	6.9E+02	--	--	6.6E+04	--	--	--	--	--	--	--	--	6.6E+04
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	3.0E+01	--	--	2.9E+03	--	--	--	--	--	--	--	--	2.9E+03
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	6.0E+01	--	--	5.7E+03	--	--	--	--	--	--	--	--	5.7E+03
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	5.1E+00	--	--	4.8E+02	--	--	--	--	--	--	--	--	4.8E+02
Nonylphenol	0	7.0E+00	1.7E+00	--	3.4E+02	1.6E+02	--	--	--	--	--	--	--	3.4E+02	1.6E+02	--
Parathion	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Total <sup>C</sup>	0	--	3.0E-02	6.4E-04	--	2.9E+00	6.1E-02	--	--	--	--	--	--	--	2.9E+00	6.1E-02
Pentachlorophenol <sup>C</sup>	0	1.3E+01	7.9E+00	3.0E+01	6.2E+02	7.5E+02	2.9E+03	--	--	--	--	--	--	6.2E+02	7.5E+02	2.9E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Phenol	0	--	--	8.6E+05	--	--	8.2E+07	--	--	--	--	--	--	--	--	8.2E+07
Phosphorus (Elemental)	0	--	1.0E-01	--	--	9.5E+00	--	--	--	--	--	--	--	--	9.5E+00	--
Pyrene	0	--	--	4.0E+03	--	--	3.8E+05	--	--	--	--	--	--	--	--	3.8E+05
Selenium	0	2.9E+02	7.1E+01	4.2E+03	1.4E+04	6.7E+03	4.0E+05	--	--	--	--	--	--	1.4E+04	6.7E+03	4.0E+05
Silver	0	1.9E+00	--	--	9.1E+01	--	--	--	--	--	--	--	--	9.1E+01	--	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	4.0E+01	--	--	3.8E+03	--	--	--	--	--	--	--	--	3.8E+03
Tetrachloroethylene <sup>C</sup>	0	--	--	3.3E+01	--	--	3.1E+03	--	--	--	--	--	--	--	--	3.1E+03
Thallium	0	--	--	4.7E-01	--	--	4.5E+01	--	--	--	--	--	--	--	--	4.5E+01
Toluene	0	--	--	6.0E+03	--	--	5.7E+05	--	--	--	--	--	--	--	--	5.7E+05
Toxaphene <sup>C</sup>	0	2.1E-01	2.0E-04	2.8E-03	1.0E+01	1.9E-02	2.7E-01	--	--	--	--	--	--	1.0E+01	1.9E-02	2.7E-01
Tributyltin	0	4.2E-01	7.4E-03	--	2.0E+01	7.0E-01	--	--	--	--	--	--	--	2.0E+01	7.0E-01	--
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	6.7E+03	--	--	--	--	--	--	--	--	6.7E+03
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	1.6E+02	--	--	1.5E+04	--	--	--	--	--	--	--	--	1.5E+04
Trichloroethylene <sup>C</sup>	0	--	--	3.0E+02	--	--	2.9E+04	--	--	--	--	--	--	--	--	2.9E+04
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	2.4E+01	--	--	2.3E+03	--	--	--	--	--	--	--	--	2.3E+03
Vinyl Chloride <sup>C</sup>	0	--	--	2.4E+01	--	--	2.3E+03	--	--	--	--	--	--	--	--	2.3E+03
Zinc	0	9.0E+01	8.1E+01	2.6E+04	4.3E+03	7.7E+03	2.5E+06	--	--	--	--	--	--	4.3E+03	7.7E+03	2.5E+06

#### Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific	
	Target Value (SSTV)	
Antimony	6.1E+04	
Arsenic III	1.3E+03	
Cadmium	5.0E+02	
Chromium III	#VALUE!	
Chromium VI	2.9E+03	
Copper	1.8E+02	
Lead	5.3E+02	
Mercury	3.5E+01	
Nickel	4.7E+02	
Selenium	4.0E+03	
Silver	3.6E+01	
Zinc	1.7E+03	

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Station ID	Collection Date	Time Tide Code	Depth	Temp Celcius	Field Ph	Do Probe	Salinity	Specific Conductance
2-JMS032.59	27-Jan-10	Flood	1	6.2	7.6	12.4	0.3	694
2-JMS032.59	27-Jan-10		2	6.2	7.6	12.4	0.3	686
2-JMS032.59	27-Jan-10		3	6.1	7.6	12.3	0.3	708
2-JMS032.59	27-Jan-10		4	6.1	7.6	12.3	0.3	721
2-JMS032.59	27-Jan-10		5	6.1	7.6	12.1	0.3	726
2-JMS032.59	27-Jan-10		6	6.1	7.6	12.2	0.3	726
2-JMS032.59	27-Jan-10		7	6.1	7.6	12.2	0.3	731
2-JMS032.59	27-Jan-10		8	6.1	7.6	12.1	0.3	747
2-JMS032.59	27-Jan-10		9	6.1	7.7	12.2	0.3	761
2-JMS032.59	27-Jan-10		10	6.2	7.7	12.1	0.3	761
2-JMS032.59	23-Feb-10	Ebb	1	4.6	7.6	12.7	3.3	5941
2-JMS032.59	23-Feb-10		2	4.4	7.5	12.8	5.2	9290
2-JMS032.59	23-Feb-10		3	4.3	7.6	12.8	5.7	10111
2-JMS032.59	23-Feb-10		4	4.3	7.6	12.9	6.3	11116
2-JMS032.59	23-Feb-10		5	4.2	7.6	13	6.5	11549
2-JMS032.59	23-Feb-10		6	4.2	7.6	12.5	7.1	12517
2-JMS032.59	23-Feb-10		7	4.2	7.6	12.7	7.4	12990
2-JMS032.59	23-Feb-10		8	4.2	7.6	12.4	7.6	13221
2-JMS032.59	23-Feb-10		9	4.1	7.6	12.4	7.6	13283
2-JMS032.59	23-Feb-10		10	4.1	7.6	12.7	7.8	13498
2-JMS032.59	23-Feb-10		11	4.1	7.6	12.9	7.8	13520
2-JMS032.59	2-Mar-10	Flood	1	5.2		13	0.5	1016
2-JMS032.59	2-Mar-10		2	5.2		13	0.5	1024
2-JMS032.59	2-Mar-10		3	5.2		12.8	0.5	1038
2-JMS032.59	2-Mar-10		4	5.2		12.7	0.5	1050
2-JMS032.59	2-Mar-10		5	5.2		12.7	0.5	1047
2-JMS032.59	2-Mar-10		6	5.2		12.6	0.5	1080
2-JMS032.59	2-Mar-10		7	5.2		12.6	0.5	1083
2-JMS032.59	2-Mar-10		8	5.2		12.5	0.5	1093
2-JMS032.59	2-Mar-10	Ebb	9	5.2		12.5	0.5	1091
2-JMS032.59	6-Apr-10		1	17.9	7.8	10.2	0	168
2-JMS032.59	6-Apr-10		2	17.8	7.8	10.2	0	167
2-JMS032.59	6-Apr-10		3	17.8	7.8	10.2	0	166
2-JMS032.59	6-Apr-10		4	17.8	7.8	10.1	0	165
2-JMS032.59	6-Apr-10		5	17.8	7.8	10.1	0	165
2-JMS032.59	6-Apr-10		6	17.7	7.8	10.2	0	165
2-JMS032.59	6-Apr-10		7	17.7	7.8	10	0	164
2-JMS032.59	6-Apr-10		8	17.6	7.8	10	0	165
2-JMS032.59	6-Apr-10		9	17.6	7.8	10	0	165
2-JMS032.59	6-Apr-10		10	17.6	7.8	10	0	165
2-JMS032.59	4-May-10	Ebb	0.3	21.7			2.2	4108
2-JMS032.59	4-May-10	Ebb	1	21.7	7.6	8.7	2.2	4108
2-JMS032.59	4-May-10		2	21.6	7.6	8.6	2.6	4875
2-JMS032.59	4-May-10		3	21.6	7.6	8.6	2.6	4886
2-JMS032.59	4-May-10		4	21.6	7.6	8.4	2.7	4959
2-JMS032.59	4-May-10		5	21.3	7.5	8.4	3.1	5879
2-JMS032.59	4-May-10		6	21.3	7.5	8.4	3.5	6436
2-JMS032.59	4-May-10		7	21.2	7.5	8.4	3.8	7031
2-JMS032.59	4-May-10		8	21.2	7.5	8.4	3.9	7086
2-JMS032.59	4-May-10		9	21.2	7.5	8.4	4	7194
2-JMS032.59	4-May-10		10	21.2	7.5	8.3	4	7284
2-JMS032.59	17-Jun-10	Ebb	1	28.3	7.6	6.1	6.1	10947
2-JMS032.59	17-Jun-10		2	28.2	7.5	6.1	6.4	11297
2-JMS032.59	17-Jun-10		3	28.2	7.5	6	6.6	11552
2-JMS032.59	17-Jun-10		4	28.2	7.5	6	6.6	11593
2-JMS032.59	17-Jun-10		5	28.2	7.5	5.9	6.7	11750
2-JMS032.59	17-Jun-10		6	28.2	7.5	5.9	6.8	12116
2-JMS032.59	17-Jun-10		7	28.1	7.5	5.8	7	12405
2-JMS032.59	17-Jun-10		8	28.1	7.4	5.8	7.2	12723
2-JMS032.59	17-Jun-10		9	28.1	7.4	5.7	7.5	13111
2-JMS032.59	17-Jun-10		10	28	7.4	5.6	7.8	14163

2-JMS032.59	7-Jul-10	Ebb	1	28.9	7.7	6.4	8.9	15420
2-JMS032.59	7-Jul-10		2	28.9	7.7	6.2	9	15480
2-JMS032.59	7-Jul-10		3	28.7	7.6	5.8	9.7	16680
2-JMS032.59	7-Jul-10		4	28.6	7.6	5.7	10.4	17730
2-JMS032.59	7-Jul-10		5	28.4	7.5	5.6	11.5	19450
2-JMS032.59	7-Jul-10		6	28.3	7.5	5.6	11.7	19740
2-JMS032.59	7-Jul-10		7	28.2	7.5	5.3	12	20300
2-JMS032.59	7-Jul-10		8	28.2	7.5	5.3	12.2	20600
2-JMS032.59	7-Jul-10		9	28.1	7.5	5.4	12.5	20930
2-JMS032.59	7-Jul-10		10	28.1	7.5	5.4	12.5	20960
2-JMS032.59	3-Aug-10	Ebb	1	28.1	7.7	6.3	10.1	17300
2-JMS032.59	3-Aug-10		2	28.4	7.6	5.8	10.5	17930
2-JMS032.59	3-Aug-10		3	28.3	7.6	5.8	10.9	18510
2-JMS032.59	3-Aug-10		4	28.4	7.6	5.5	11.4	19200
2-JMS032.59	3-Aug-10		5	28.4	7.5	5.4	11.5	19500
2-JMS032.59	3-Aug-10		6	28.3	7.5	5.3	12.1	20350
2-JMS032.59	3-Aug-10		7	28.1	7.5	5.1	12.5	21160
2-JMS032.59	3-Aug-10		8	28	7.5	5	13	21770
2-JMS032.59	3-Aug-10		9	27.9	7.5	5	13.2	22140
2-JMS032.59	3-Aug-10		10	27.9	7.5	4.9	13.3	22160
2-JMS032.59	5-Oct-10	Flood	1	20.6	7.6	6.6	10.5	17760
2-JMS032.59	5-Oct-10		2	20.7	7.6	6.6	10.5	17851
2-JMS032.59	5-Oct-10		3	20.6	7.6	6.6	10.7	18214
2-JMS032.59	5-Oct-10		4	20.6	7.6	6.6	10.7	18263
2-JMS032.59	5-Oct-10		5	20.7	7.6	6.6	10.7	18263
2-JMS032.59	5-Oct-10		6	20.7	7.6	6.6	10.8	18299
2-JMS032.59	5-Oct-10		7	20.6	7.6	6.6	10.8	18297
2-JMS032.59	5-Oct-10		8	20.7	7.6	6.6	10.7	18280
2-JMS032.59	5-Oct-10		9	20.6	7.6	6.6	10.7	18272
2-JMS032.59	5-Oct-10		10	20.7	7.6	6.6	10.7	18281
2-JMS032.59	2-Nov-10		0					
2-JMS032.59	2-Nov-10	Flood	1	16.2	7.8	7	10.7	18071
2-JMS032.59	2-Nov-10		2	16.3	7.8	7.1	10.9	18634
2-JMS032.59	2-Nov-10		3	16.3	7.8	7	11.1	18783
2-JMS032.59	2-Nov-10		4	16.6	7.8	6.9	11.3	19195
2-JMS032.59	2-Nov-10		5	16.5	7.8	7	11.7	19783
2-JMS032.59	2-Nov-10		6	16.6	7.8	6.9	11.7	19832
2-JMS032.59	2-Nov-10		7	16.6	7.8	6.9	11.7	19840
2-JMS032.59	2-Nov-10		8	16.6	7.8	7	11.8	19872
2-JMS032.59	2-Nov-10		9	16.6	7.8	7	11.8	19913
2-JMS032.59	9-Dec-10	Ebb	1	5.9	7.7		4	7212
2-JMS032.59	9-Dec-10		2	6	7.7		4.2	7619
2-JMS032.59	9-Dec-10		3	6.1	7.7		4.4	8081
2-JMS032.59	9-Dec-10		4	6.2	7.7		4.6	8410
2-JMS032.59	9-Dec-10		5	6.4	7.7		5.8	10553
2-JMS032.59	9-Dec-10		6	6.5	7.7		7.5	13332
2-JMS032.59	9-Dec-10		7	6.5	7.7		8.1	14224
2-JMS032.59	9-Dec-10		8	6.6	7.7		8.6	14947
2-JMS032.59	9-Dec-10		9	6.6	7.7		9	15577
2-JMS032.59	9-Dec-10		10	6.6	7.7		9.2	15874
2-JMS032.59	6-Jan-11	Flood	1	3.6	7.8		6.7	11922
2-JMS032.59	6-Jan-11		2	3.6	7.8		7.1	12690
2-JMS032.59	6-Jan-11		3	3.5	7.8		7.5	13190
2-JMS032.59	6-Jan-11		4	3.5	7.8		7.7	13640
2-JMS032.59	6-Jan-11		5	3.5	7.9		7.8	13739
2-JMS032.59	6-Jan-11		6	3.5	7.9		7.8	13782
2-JMS032.59	6-Jan-11		7	3.5	7.9		8	14094
2-JMS032.59	6-Jan-11		8	3.4	7.9		8	14204
2-JMS032.59	6-Jan-11		9	3.3	7.9		8.3	14654
2-JMS032.59	6-Jan-11		10	3.3	7.9		8.5	14945
2-JMS032.59	1-Feb-11	Ebb	1	3.7	8		8.6	15099
2-JMS032.59	1-Feb-11		2	3.7	8		8.9	15506

2-JMS032.59	1-Feb-11		3	3.6	8.1	9.3	16131
2-JMS032.59	1-Feb-11		4	3.4	8.1	10.4	17914
2-JMS032.59	1-Feb-11		5	3.4	8.1	10.4	17965
2-JMS032.59	1-Feb-11		6	3.4	8.1	10.5	17995
2-JMS032.59	1-Feb-11		7	3.4	8.2	10.5	18142
2-JMS032.59	1-Feb-11		8	3.4	8.2	10.6	18417
2-JMS032.59	1-Feb-11		9	3.3	8.2	10.9	18725
2-JMS032.59	1-Feb-11		10	3.3	8.2	10.9	18793
2-JMS032.59	1-Feb-11		11	3.3	8.2	10.9	18795
2-JMS032.59	2-Mar-11	Flood	1	9.9	7.6	7	12364
2-JMS032.59	2-Mar-11		2	9.9	7.6	7.2	12573
2-JMS032.59	2-Mar-11		3	9.9	7.6	7.4	12909
2-JMS032.59	2-Mar-11		4	9.8	7.6	7.5	13102
2-JMS032.59	2-Mar-11		5	9.7	7.6	7.6	13186
2-JMS032.59	2-Mar-11		6	9.7	7.6	7.6	13218
2-JMS032.59	2-Mar-11		7	9.6	7.6	7.6	13276
2-JMS032.59	2-Mar-11		8	9.3	7.7	8.6	15234
2-JMS032.59	2-Mar-11		9	9.3	7.6	9.1	15716
2-JMS032.59	2-Mar-11		10	9.3	7.6	9.2	15789
2-JMS032.59	2-Mar-11		11	9.3	7.6	9.2	15782
2-JMS032.59	6-Apr-11	Ebb	1	13	7.7	0.9	1825
2-JMS032.59	6-Apr-11		2	13	7.7	0.9	1800
2-JMS032.59	6-Apr-11		3	13	7.7	0.9	1798
2-JMS032.59	6-Apr-11		4	13	7.7	0.9	1779
2-JMS032.59	6-Apr-11		5	13	7.7	0.9	1776
2-JMS032.59	6-Apr-11		6	13	7.7	0.9	1789
2-JMS032.59	6-Apr-11		7	13	7.7	0.9	1797
2-JMS032.59	6-Apr-11		8	13	7.7	0.9	1815
2-JMS032.59	6-Apr-11		9	13	7.7	0.9	1822
2-JMS032.59	6-Apr-11		10	13	7.7	0.9	1842
2-JMS032.59	7-Jun-11	Ebb	1	26.5	7.5	2.8	5406
2-JMS032.59	7-Jun-11		2	26.5	7.5	3.1	5727
2-JMS032.59	7-Jun-11		3	26.5	7.5	3.1	5770
2-JMS032.59	7-Jun-11		4	26.5	7.5	3.2	5874
2-JMS032.59	7-Jun-11		5	26.4	7.5	3.3	6023
2-JMS032.59	7-Jun-11		6	26.4	7.5	3.5	6578
2-JMS032.59	7-Jun-11		7	26.4	7.5	3.7	6745
2-JMS032.59	7-Jun-11		8	26.3	7.4	4	7070
2-JMS032.59	7-Jun-11		9	26.2	7.4	4.7	8856
2-JMS032.59	7-Jun-11		10	26.1	7.4	5.5	9931
2-JMS032.59	7-Jun-11		11	26	7.4	5.9	10596
2-JMS032.59	2-Aug-11	Flood	1	31.1	7.5	7.4	12918
2-JMS032.59	2-Aug-11		2	31	7.5	7.4	13011
2-JMS032.59	2-Aug-11		3	31	7.5	7.4	13042
2-JMS032.59	2-Aug-11		4	31	7.5	7.4	13060
2-JMS032.59	2-Aug-11		5	31.1	7.5	7.5	13099
2-JMS032.59	2-Aug-11		6	31	7.5	7.5	13109
2-JMS032.59	2-Aug-11		7	31	7.5	7.5	13169
2-JMS032.59	2-Aug-11		8	31	7.4	7.6	13228
2-JMS032.59	2-Aug-11		9	31	7.4	7.6	13263
2-JMS032.59	2-Aug-11		10	31	7.4	7.7	13522
2-JMS032.59	2-Aug-11		11	31	7.4	7.9	13737
2-JMS032.59	4-Oct-11	Ebb	1	20.4	7.6	3.3	5936
2-JMS032.59	4-Oct-11		2	20.4	7.7	3.3	6142
2-JMS032.59	4-Oct-11		3	20.5	7.6	3.4	6339
2-JMS032.59	4-Oct-11		4	20.6	7.6	3.8	6857
2-JMS032.59	4-Oct-11		5	20.7	7.6	4.2	7431
2-JMS032.59	4-Oct-11		6	21	7.6	4.4	7998
2-JMS032.59	4-Oct-11		7	21	7.6	4.7	8347
2-JMS032.59	4-Oct-11		8	21	7.6	4.8	8527
2-JMS032.59	4-Oct-11		9	21	7.6	4.8	8558
2-JMS032.59	4-Oct-11		10	21.1	7.6	4.9	8701

2-JMS032.59	4-Oct-11		11	21.1	7.6	5.2	9139
2-JMS032.59	3-Nov-11	Ebb	1	14.2	7.8	5.1	9194
2-JMS032.59	3-Nov-11		2	14.2	7.8	5.2	9274
2-JMS032.59	3-Nov-11		3	14.7	7.8	6	10689
2-JMS032.59	3-Nov-11		4	14.6	7.7	7.2	12702
2-JMS032.59	3-Nov-11		5	14.6	7.7	8	13784
2-JMS032.59	3-Nov-11		6	14.6	7.7	8.2	14119
2-JMS032.59	3-Nov-11		7	14.6	7.7	8.4	14453
2-JMS032.59	3-Nov-11		8	14.6	7.7	9	15375
2-JMS032.59	3-Nov-11		9	14.6	7.7	9	15648
2-JMS032.59	3-Nov-11		10	14.5	7.7	9.2	15742
2-JMS032.59	3-Nov-11		11	14.5	7.7	9.2	15743
2-JMS032.59	6-Dec-11	Flood	1	12.5	7.7	4.5	8240
2-JMS032.59	6-Dec-11		2	12.5	7.7	4.8	8686
2-JMS032.59	6-Dec-11		3	12.4	7.7	4.9	8757
2-JMS032.59	6-Dec-11		4	12.3	7.7	5.1	9162
2-JMS032.59	6-Dec-11		5	12.2	7.7	5.3	9510
2-JMS032.59	6-Dec-11		6	12.3	7.7	5.3	9422
2-JMS032.59	6-Dec-11		7	12.2	7.7	5.8	10235
2-JMS032.59	6-Dec-11		8	12.2	7.7	5.9	10508
2-JMS032.59	6-Dec-11		9	12.1	7.7	6	10692
2-JMS032.59	6-Dec-11		10	12.1	7.7	6.1	10790
2-JMS032.59	6-Dec-11		11	12.1	7.7	6.1	10875
2-JMS032.59	24-Jan-12	Flood	1	7.21	7.89	1.65	3176
2-JMS032.59	24-Jan-12		2	7.23	7.87	1.97	3740
2-JMS032.59	24-Jan-12		3	7.19	7.86	2.32	4329
2-JMS032.59	24-Jan-12		4	7.04	7.86	2.46	4622
2-JMS032.59	24-Jan-12		5	7.03	7.86	2.48	4634
2-JMS032.59	24-Jan-12		6	7.03	7.87	2.49	4656
2-JMS032.59	24-Jan-12		7	7.02	7.88	2.5	4699
2-JMS032.59	24-Jan-12		8	7.01	7.88	2.59	4880
2-JMS032.59	24-Jan-12		9	7.01	7.89	2.64	4912
2-JMS032.59	24-Jan-12		10	7.02	7.91	2.64	4922
2-JMS032.59	24-Jan-12		11	7.02	7.99	2.63	4900
2-JMS032.59	7-Feb-12	Flood	1	9.19	7.83	2.7	5015
2-JMS032.59	7-Feb-12		2	9.28	7.82	2.88	5337
2-JMS032.59	7-Feb-12		3	9.23	7.81	3.22	5940
2-JMS032.59	7-Feb-12		4	9.25	7.81	3.4	6197
2-JMS032.59	7-Feb-12		5	9.25	7.81	3.54	6470
2-JMS032.59	7-Feb-12		6	9.21	7.81	3.65	6633
2-JMS032.59	7-Feb-12		7	9.15	7.8	3.98	7086
2-JMS032.59	7-Feb-12		8	9.14	7.81	3.98	7087
2-JMS032.59	7-Feb-12		9	9.12	7.81	4.1	7370
2-JMS032.59	7-Feb-12		10	9.06	7.81	4.53	8150
2-JMS032.59	7-Feb-12		11	9.06	7.82	4.61	8252
2-JMS032.59	7-Mar-12	Flood	1	9.7	8.01	0.23	464
2-JMS032.59	7-Mar-12		2	9.72	8.04	0.22	454
2-JMS032.59	7-Mar-12		3	9.71	8.03	0.23	479
2-JMS032.59	7-Mar-12		4	9.71	8.02	0.23	472
2-JMS032.59	7-Mar-12		5	9.7	8.02	0.24	497
2-JMS032.59	7-Mar-12		6	9.65	8.02	0.25	505
2-JMS032.59	7-Mar-12		7	9.62	8.02	0.25	512
2-JMS032.59	7-Mar-12		8	9.61	8.03	0.25	517
2-JMS032.59	7-Mar-12		9	9.6	8.05	0.28	542
2-JMS032.59	7-Mar-12		10	9.58	8.06	0.31	632
2-JMS032.59	3-Apr-12		0				
2-JMS032.59	3-Apr-12	Flood	1	17.39	8	1.84	3631
2-JMS032.59	3-Apr-12		2	17.36	7.81	2.37	4411
2-JMS032.59	3-Apr-12		3	17.32	7.79	2.42	4523
2-JMS032.59	3-Apr-12		4	17.29	7.75	2.62	4940
2-JMS032.59	3-Apr-12		5	17.3	7.73	2.81	4936
2-JMS032.59	3-Apr-12		6	17.21	7.7	3.12	5812

2-JMS032.59	3-Apr-12	7	17.18	7.66	3.58	6346
2-JMS032.59	3-Apr-12	8	17.12	7.65	4.08	7351
2-JMS032.59	3-Apr-12	9	17.11	7.63	4.1	7393
2-JMS032.59	3-Apr-12	10	16.98	7.59	5.01	8922
2-JMS032.59	3-Apr-12	11	16.97	7.58	15.08	9041

James River Data  
2 years requested from  
Planning. DDA

## VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

## SCREENING INFORMATION

This application is divided into sections. Sections A pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Will this facility generate sewage sludge? ☒ Yes ☐ No

Will this facility derive a material from sewage sludge? ☐ Yes ☒ No

If you answered Yes to either, complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge).

3. Will this facility apply sewage sludge to the land? ☐ Yes ☒ No

Will sewage sludge from this facility be applied to the land? ☐ Yes ☒ No

If you answered No to both questions above, skip Section C.

If you answered Yes to either, answer the following three questions:

a. Will the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?  
☐ Yes ☐ No

b. Will sewage sludge from this facility be placed in a bag or other container for sale or give-away for application to the land? ☐ Yes ☐ No

c. Will sewage sludge from this facility be sent to another facility for treatment or blending? ☐ Yes ☐ No

If you answered No to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? ☐ Yes ☒ No

If Yes, complete Section D (Surface Disposal).



## SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. Facility Information.
  - a. Facility name: Chesapeake-Elizabeth STP
  - b. Contact person: Jamie Heisig-Mitchell  
Title: Chief of Technical Services Division  
Phone: (757)460-4220
  - c. Mailing address:  
Street or P.O. Box: 1436 Air Rail Avenue  
City or Town: Virginia Beach State: VA Zip: 23455
  - d. Facility location:  
Street or Route #: 300 Ron Springs Road  
County: James City  
City or Town: Williamsburg State: VA Zip: 23185
  - e. Is this facility a Class I sludge management facility? X Yes    No
  - f. Facility design flow rate: 22.5 mgd
  - g. Total population served: 69059
  - h. Indicate the type of facility:  
X Publicly owned treatment works (POTW)  
   Privately owned treatment works  
   Federally owned treatment works  
   Blending or treatment operation  
   Surface disposal site  
   Other (describe):
2. Applicant Information. If the applicant is different from the above, provide the following:
  - a. Applicant name: Hampton Roads Sanitation District
  - b. Mailing address:  
Street or P.O. Box: 1436 Air Rail Avenue  
City or Town: Virginia Beach State: VA Zip: 23455
  - c. Contact person: Jamie Heisig-Mitchell  
Title: Chief of Technical Services Division  
Phone: (757)460-4220
  - d. Is the applicant the owner or operator (or both) of this facility?  
X owner X operator
  - e. Should correspondence regarding this permit be directed to the facility or the applicant? (Check one)  
   facility X applicant
3. Permit Information.
  - a. Facility's VPDES permit number (if applicable): VA0081302
  - b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:  

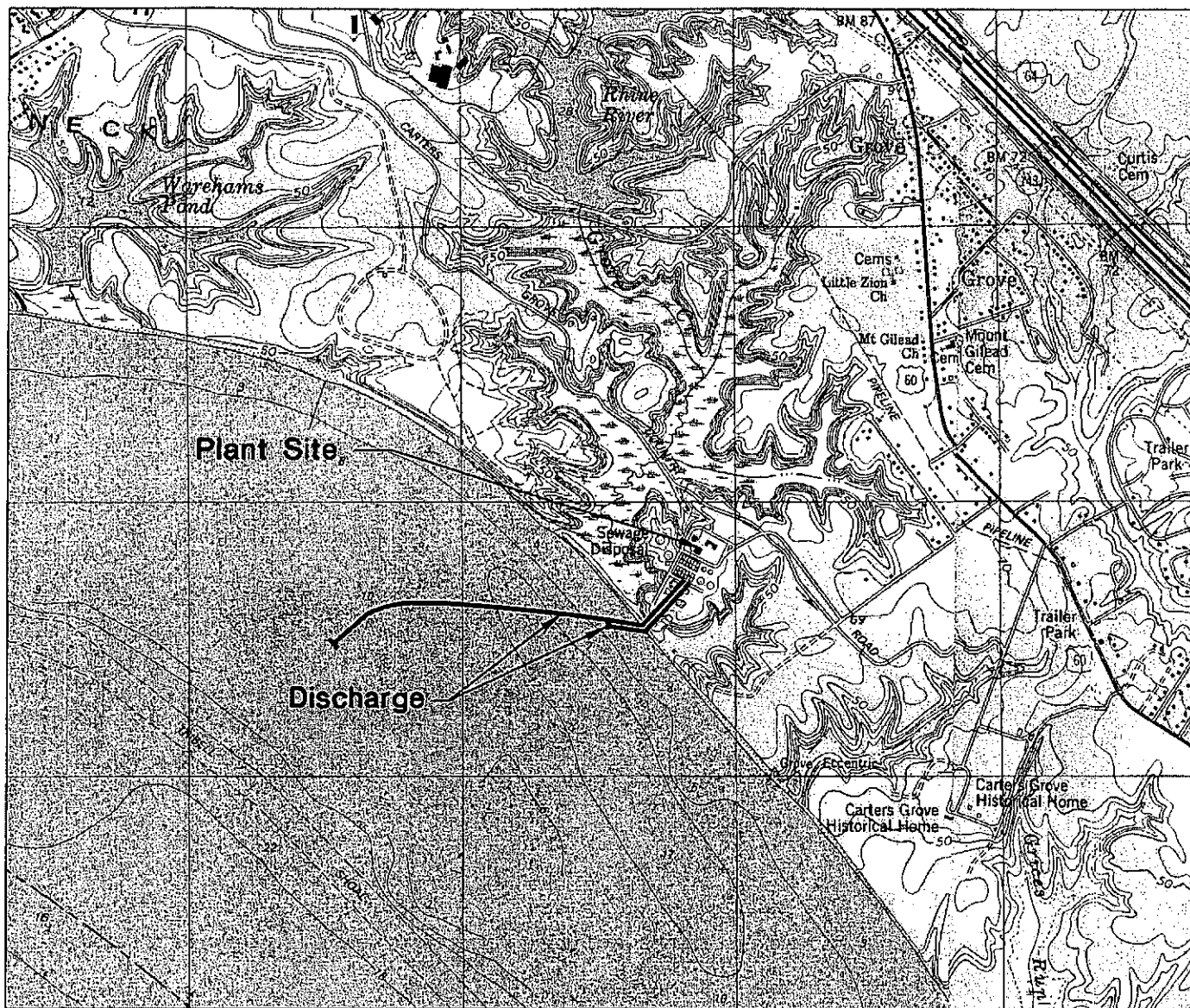
<u>Permit Number:</u>	<u>Type of Permit:</u>
<u>VAD082875402</u>	<u>RCRA</u>
<u>60355</u>	<u>DEQ-Air Division</u>
4. Indian Country. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country?    Yes X No If yes, describe:

**FACILITY NAME:** Williamsburg STP

**VPDES PERMIT NUMBER:** VA0081302

5. Topographic Map. Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility:
- Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
  - Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.
6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction.
7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? Yes X No  
If yes, provide the following for each contractor (attach additional pages if necessary).  
Name:  
Mailing address:  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( ) \_\_\_\_\_  
Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge: \_\_\_\_\_
- If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).
8. Pollutant Concentrations. Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old. **See attached sheet.**

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic				
Cadmium				
Chromium				
Copper				
Lead				
Mercury				
Molybdenum				
Nickel				
Selenium				
Zinc				



Location Map  
for  
Williamsburg Treatment Plant

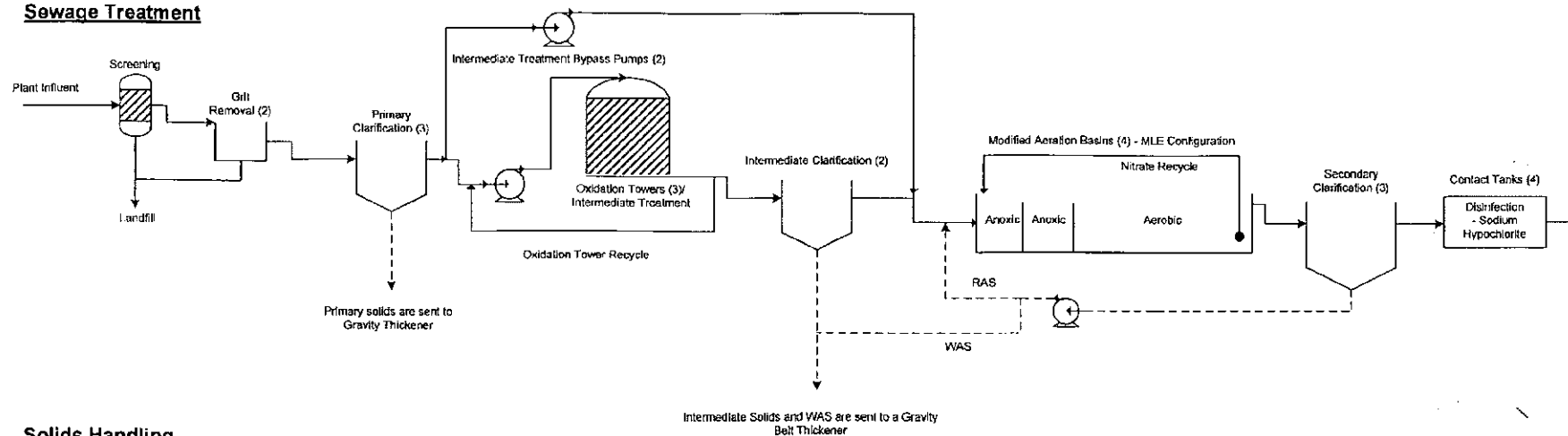
June 2003

Scale: 1"=2000'

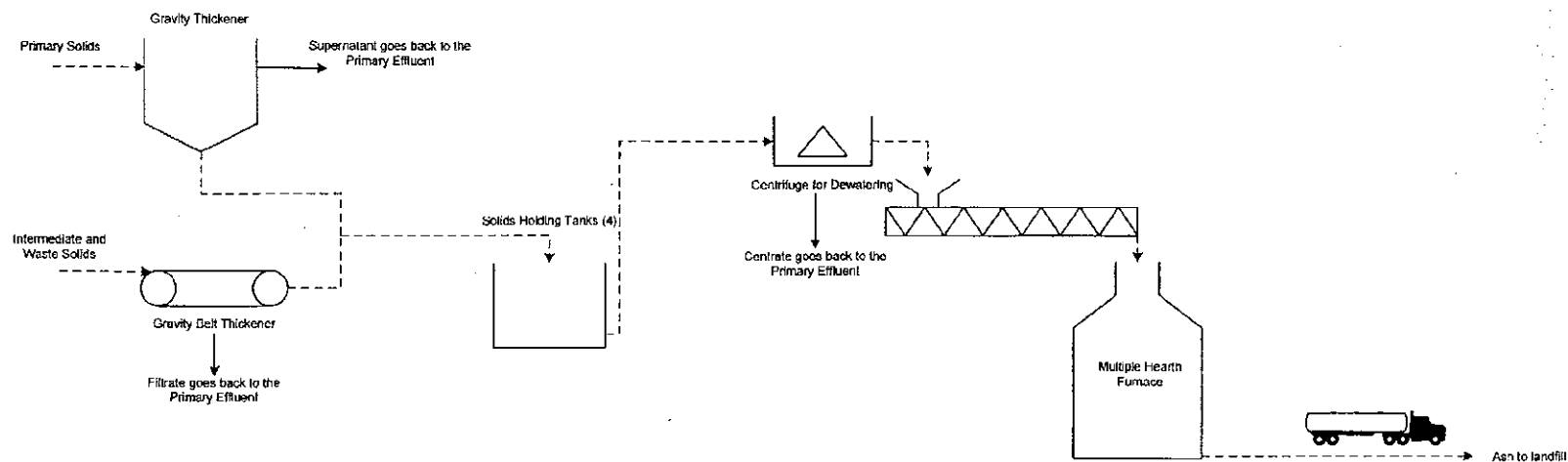
USGS Map Reference

# Williamsburg Wastewater Treatment Plant HRSD

## Sewage Treatment



## Solids Handling



Williamsburg STP Biosolids Data VA0081302

Section 8.A - Pollutant Concentrations

Date	Arsenic mg/kg	Lead mg/kg	Nickel mg/kg	Chromium mg/kg	Cadmium mg/kg	Mercury mg/kg
3/2/11	<8	38	6	24	2	0.3
4/6/11	<9	75	11	34	2	0.4
5/4/11	<8	32	15	24	<1.7	0.3
6/1/11	<8	28	6	22	<1.7	0.3
7/6/11	<11	60	8	35	<1.8	0.3
8/3/11	<10	20	8	36	<1.6	0.3
9/7/11	<11	17	8	23	<1.8	0.3
10/5/11	<10	22	9	40	<1.6	0.3
11/2/11	<11	18	10	38	<1.8	0.3
12/7/11	<11	26	9	28	3	0.2
1/4/12	16	110	9	37	<1.7	0.4
2/1/12	<10	26	6	27	<1.7	0.3
Method	6010C	6010C	6010C	6010C	6010C	7471B
Report Limit (ug/l)	20	5	4	4	2	0.1

All values are on a dry weight basis.

**FACILITY NAME:** Williamsburg STP

**VPDES PERMIT NUMBER:** VA0081302

9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

X Section A (General Information)


X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)

     Section C (Land Application of Bulk Sewage Sludge)

     Section D (Surface Disposal)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title Edward G. Henifin, P.E. General Manager

Signature  Date Signed 4/4/2012

Telephone number 757-460-4242

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

**SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION  
OF A MATERIAL DERIVED FROM SEWAGE SLUDGE**

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

## 1. Amount Generated On Site.

Total dry metric tons per 365-day period generated at your facility: 5072 dry metric tons (2011 estimate)

## 2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.

a. Facility name: Not applicable

b. Contact Person:

Title:

Phone ( )

c. Mailing address:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip:

d. Facility Address:

(not P.O. Box)

e. Total dry metric tons per 365-day period received from this facility: \_\_\_\_\_ dry metric tons

f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:

## 3. Treatment Provided at Your Facility.

a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?

Class A Class B X Neither or unknown

b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge:

c. Which vector attraction reduction option is met for the sewage sludge at your facility?

Option 1 (Minimum 38 percent reduction in volatile solids)Option 2 (Anaerobic process, with bench-scale demonstration)Option 3 (Aerobic process, with bench-scale demonstration)Option 4 (Specific oxygen uptake rate for aerobically digested sludge)Option 5 (Aerobic processes plus raised temperature)Option 6 (Raise pH to 12 and retain at 11.5)Option 7 (75 percent solids with no unstabilized solids)Option 8 (90 percent solids with unstabilized solids)X None or unknownd. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: Nonee. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: Biosolids are incinerated.4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge). **Not applicable**

(If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)

a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: \_\_\_\_\_ dry metric tons

b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?

Yes No5. Sale or Give-Away in a Bag or Other Container for Application to the Land. **Not applicable**

(Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.)

a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land: \_\_\_\_\_ dry metric tons

**FACILITY NAME:** Williamsburg STP

**VPDES PERMIT NUMBER:** VA0081302

- b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

6. Shipment Off Site for Treatment or Blending.

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or blending. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as necessary.)

- a. Receiving facility name: Not applicable
- b. Facility contact:  
Title:  
Phone: (    )
- c. Mailing address:  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: \_\_\_\_\_ dry metric tons
- e. List, on this form or an attachment, the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_
- f. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility?    Yes    No  
Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?  
   Class A    Class B    Neither or unknown  
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge:
- g. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge?    Yes    No  
Which vector attraction reduction option is met for the sewage sludge at the receiving facility?  
   Option 1 (Minimum 38 percent reduction in volatile solids)  
   Option 2 (Anaerobic process, with bench-scale demonstration)  
   Option 3 (Aerobic process, with bench-scale demonstration)  
   Option 4 (Specific oxygen uptake rate for aerobically digested sludge)  
   Option 5 (Aerobic processes plus raised temperature)  
   Option 6 (Raise pH to 12 and retain at 11.5)  
   Option 7 (75 percent solids with no unstabilized solids)  
   Option 8 (90 percent solids with unstabilized solids)  
   None unknown  
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge:  
Does the receiving facility provide any additional treatment or blending not identified in f or g above?  
   Yes    No  
If yes, describe, on this form or another sheet of paper, the treatment processes not identified in f or g above
- h. If you answered yes to f., g or h above, attach a copy of any information you provide to the receiving facility to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530.G.
- j. Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land?    Yes    No  
If yes, provide a copy of all labels or notices that accompany the product being sold or given away.
- k. Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes?    Yes    No. If no, provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.  
Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the week and the times of the day sewage sludge will be transported.



7. Land Application of Bulk Sewage Sludge. **Not applicable**

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

- a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites: \_\_\_\_\_ dry metric tons
- b. Do you identify all land application sites in Section C of this application? ☐ Yes ☐ No  
If no, submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).
- c. Are any land application sites located in States other than Virginia? ☐ Yes ☐ No  
If yes, describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.
- d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal. **Not applicable**

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: \_\_\_\_\_ dry metric tons
- b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?  
☐ Yes ☐ No  
If no, answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.
- c. Site name or number:
- d. Contact person:  
Title:  
Phone: (   )  
Contact is: ☐ Site Owner ☐ Site operator
- e. Mailing address.  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: \_\_\_\_\_ dry metric tons
- g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:  

<u>Permit Number:</u>	<u>Type of Permit:</u>
_____	_____
_____	_____

## 9. Incineration.

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: 5072 dry metric tons (2011 estimate)
- b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?  
☒ Yes ☐ No  
If no, answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.
- c. Incinerator name or number:
- d. Contact person:  
Title:  
Phone: (   )  
Contact is: ☐ Incinerator Owner ☐ Incinerator Operator
- e. Mailing address.  
Street or P.O. Box:

FACILITY NAME: Williamsburg STP

VPDES PERMIT NUMBER: VA0081302

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

- f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: \_\_\_\_\_ dry metric tons

- g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:

Permit Number:

Type of Permit:

\_\_\_\_\_  
\_\_\_\_\_

10. Disposal in a Municipal Solid Waste Landfill. Alternative Emergency Plan

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

- a. Landfill name: Bethel Landfill

- b. Contact person: Howard Burns

Title: Landfill Supervisor

Phone: (757)766-3033

Contact is: ☐ Landfill Owner ☒ Landfill Operator

- c. Mailing address.

Street or P.O. Box: 100 North Park Lane

City or Town: Hampton State: VA Zip: 23666

- d. Landfill location.

Street or Route #: 100 North Park Lane

County:

City or Town: Hampton State: VA Zip: 23666

- e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill:

0 dry metric tons

- f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

Permit Number:

Type of Permit:

580

DEQ- Solid Waste Division

- g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?

☒ Yes ☐ No

- h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? ☒ Yes ☐ No

- i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? ☒ Yes ☐ No

Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported. Turn right on Route 60. Follow to the entrance to 64 E and stay on 64 E until exit 261. Turn right on Big Bethel Road and turn left on North Park Lane.

Transport would occur during daytime business hours of the landfill.

FACILITY NAME: Williamsburg STP

VPDES PERMIT NUMBER: VA0081302

SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Not Applicable

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:

The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead) (EQ Sludge); or

The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or

You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

1. Identification of Land Application Site.

a. Site name or number:

b. Site location (Complete i and ii)

i. Street or Route#:

County:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

ii. Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Method of latitude/longitude determination

\_\_\_\_\_ USGS map \_\_\_\_\_ Filed survey \_\_\_\_\_ Other

c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

2. Owner Information.

a. Are you the owner of this land application site? Yes No

b. If no, provide the following information about the owner:

Name:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: ( )

3. Applier Information:

a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? Yes No

b. If no, provide the following information for the person who applies the sewage sludge:

Name:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: ( )

c. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the person who applies sewage sludge to this land application site:

Permit Number:

Type of Permit:

\_\_\_\_\_  
\_\_\_\_\_

4. Site Type. Identify the type of land application site from among the following:

\_\_\_\_\_ Agricultural land

\_\_\_\_\_ Reclamation site

\_\_\_\_\_ Forest

\_\_\_\_\_ Public contact site

\_\_\_\_\_ Other. Describe

5. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No If yes, answer a and b.

a. Indicate which vector attraction reduction option is met:

\_\_\_\_\_ Option 9 (Injection below land surface)

\_\_\_\_\_ Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or on another sheet of paper, any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:

FACILITY NAME: Williamsburg STP

VPDES PERMIT NUMBER: VA0081302

6. Cumulative Loadings and Remaining Allotments.

(Complete Question 6 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)

- a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993?   Yes     No

If no, sewage sludge subject to the CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority:

Contact person:

Phone: (    )

- b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993?   Yes     No   If no, skip the rest of Question 6. If yes, answer questions c - e.

- c. Site size, in hectares: \_\_\_\_\_ (one hectare = 2.471 acres)

- d. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name:

Facility contact:

Title:

Phone: (    )

Mailing address:

Street or P.O. Box:

City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

- e. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:

	<u>Cumulative loading</u>	<u>Allotment remaining</u>
Arsenic	_____	_____
Cadmium	_____	_____
Copper	_____	_____
Lead	_____	_____
Mercury	_____	_____
Nickel	_____	_____
Selenium	_____	_____
Zinc	_____	_____

Complete Questions 7-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

7. Sludge Characterization. Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)  
pH (S. U.)  
Percent Solids (%)  
Ammonium Nitrogen (mg/kg)  
Nitrate Nitrogen (mg/kg)  
Total Kjeldahl Nitrogen (mg/kg)  
Total Phosphorus (mg/kg)  
Total Potassium (mg/kg)  
Alkalinity as CaCO<sub>3</sub>\* (mg/kg)

\* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent CaCO<sub>3</sub>.

## 8. Storage Requirements.

Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.

Proposed sludge storage facilities must also provide the following information:

- a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.
  - 1) Water wells, abandoned or operating
  - 2) Surface waters
  - 3) Springs
  - 4) Public water supply(s)
  - 5) Sinkholes
  - 6) Underground and/or surface mines
  - 7) Mine pool (or other) surface water discharge points
  - 8) Mining spoil piles and mine dumps
  - 9) Quarry(s)
  - 10) Sand and gravel pits
  - 11) Gas and oil wells
  - 12) Diversion ditch(s)
  - 13) Agricultural drainage ditch(s)
  - 14) Occupied dwellings, including industrial and commercial establishments
  - 15) Landfills or dumps
  - 16) Other unlined impoundments
  - 17) Septic tanks and drainfields
  - 18) Injection wells
  - 19) Rock outcrops
- b. A topographic map of sufficient detail to clearly show the following information:
  - 1) Maximum and minimum percent slopes
  - 2) Depressions on the site that may collect water
  - 3) Drainageways that may attribute to rainfall run-on to or runoff from this site
  - 4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding
- c. Data and specifications for the storage facility lining material.
- d. Plan and cross-sectional views of the storage facility.
- e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

9. Land Area Requirements. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

10. Landowner Agreement Forms. Provide a properly completed Sewage Sludge Application Agreement Form (attached) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

## 11. Ground Water Monitoring.

Are any ground water monitoring data available for this land application site? ☐ Yes ☐ No

If yes, submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

## 12. Land Application Site Information.

(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70% the agronomic rate at a frequency greater than once in a 3 year period)

- a. Provide a general location map for each county which clearly indicates the location of all the land application sites.
- b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.
- c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U. S. Fish and Wildlife Service  
Virginia Field Office  
P. O. Box 480  
White Marsh, VA 23183  
TEL: (804)693-6694

Provide a copy of the notification letter with this application form.
- d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)  
Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.
  - 1) Soil symbol
  - 2) Soil series, textural phase and slope range
  - 3) Depth to seasonal high water table
  - 4) Depth to bedrock
  - 5) Estimated soil productivity group (for the proposed crop rotation)

**Item e - h are required for sites receiving frequent application of sewage sludge**

- e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:
  - 1). Soil symbol
  - 2). Soil series, textural phase and slope range
  - 3). Depth to seasonal high water table
  - 4). Depth to bedrock
  - 5). Estimated soil productivity group (for the proposed crop rotation)

- f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the following parameters.
- Soil Organic Matter (%)
  - Soil pH (std. units)
  - Cation Exchange Capacity (meq/100g)
  - Total Nitrogen (ppm)
  - Organic Nitrogen (ppm)
  - Ammonia Nitrogen (ppm)
  - Nitrate Nitrogen (ppm)
  - Available Phosphorus (ppm)
  - Exchangeable Potassium (mg/100g)
  - Exchangeable Sodium (mg/100g)
  - Exchangeable Calcium (mg/100g)
  - Exchangeable Magnesium (mg/100g)
  - Arsenic (ppm)
  - Cadmium (ppm)
  - Copper (ppm)
  - Lead (ppm)
  - Mercury (ppm)
  - Molybdenum (ppm)
  - Nickel (ppm)
  - Selenium (ppm)
  - Zinc (ppm)
  - Manganese (ppm)
  - Particle Size Analysis or
  - USDA Textural Estimate (%)
- g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.
- h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

FACILITY NAME: Williamsburg STP

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SEWAGE SLUDGE APPLICATION AGREEMENT

This sewage sludge application agreement is made on this date \_\_\_\_\_ between \_\_\_\_\_, referred to here as "landowner", and \_\_\_\_\_, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as \_\_\_\_\_ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of sewage sludge on landowner's land in amounts and in a manner authorized by VPDES permit number \_\_\_\_\_ which is held by the Permittee.

Landowner acknowledges that the appropriate application of sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health, the following site restrictions must be adhered to when sewage sludge receives Class B treatment for pathogen reduction:

1. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge;
2. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil;
3. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil;
4. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge;
5. Animals shall not be grazed on the land for 30 days after application of sewage sludge;
6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the State Water Control Board;
7. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge;
8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
9. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of sewage sludge borne cadmium equal to or exceeding 0.5 kilograms/hectare (0.45 pounds/acre).

Permittee agrees to notify landowner or landowner's designee of the proposed schedule for sewage sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Mailing Address

Permittee:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Mailing Address



## SECTION D. SURFACE DISPOSAL

Not Applicable

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

## 1. Information on Active Sewage Sludge Units.

- a. Unit name or number:
- b. Unit location
  - i. Street or Route#:  
County:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
  - ii. Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
Method of latitude/longitude determination  
\_\_\_\_\_ USGS map \_\_\_\_\_ Filed survey \_\_\_\_\_ Other
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
- d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period:  
\_\_\_\_\_ dry metric tons.
- e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit:  
\_\_\_\_\_ dry metric tons.
- f. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec? ☐ Yes ☐ No If yes, describe the liner or attach a description.
- g. Does the active sewage sludge unit have a leachate collection system? ☐ Yes ☐ No  
If yes, describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:
- h. If you answered no to either f or g, answer the following:  
Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? ☐ Yes ☐ No If yes, provide the actual distance in meters:
- i. Remaining capacity of active sewage sludge unit, in dry metric tons: \_\_\_\_\_ dry metric tons  
Anticipated closure date for active sewage sludge unit, if known: \_\_\_\_\_ (MM/DD/YYYY)  
Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

## 2. Sewage Sludge from Other Facilities.

Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? ☐ Yes ☐ No

If yes, provide the following information for each such facility, attach additional sheets as necessary.

- a. Facility name:
- b. Facility contact:  
Title:  
Phone: ( ) \_\_\_\_\_
- c. Mailing address.  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- d. List, on this form or an attachment, the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
\_\_\_\_\_
- e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?  
☐ Class A ☐ Class B ☐ Neither or unknown
- f. Describe, on this form or on another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:

FACILITY NAME: Williamsburg STP

VPDES PERMIT NUMBER: VA0081302

- g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?
- ☐ Option 1 (Minimum 38 percent reduction in volatile solids)
  - ☐ Option 2 (Anaerobic process, with bench-scale demonstration)
  - ☐ Option 3 (Aerobic process, with bench-scale demonstration)
  - ☐ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
  - ☐ Option 5 (Aerobic processes plus raised temperature)
  - ☐ Option 6 (Raise pH to 12 and retain at 11.5)
  - ☐ Option 7 (75 percent solids with no unstabilized solids)
  - ☐ Option 8 (90 percent solids with unstabilized solids)
  - ☐ None or unknown
- h. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge:
- i. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above:

3. Vector Attraction Reduction.

- a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?
- ☐ Option 9 (Injection below land surface)
  - ☐ Option 10 (Incorporation into soil within 6 hours)
  - ☐ Option 11 (Covering active sewage sludge unit daily)
- b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge:

4. Ground Water Monitoring.

- a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? ☐ Yes ☐ No  
If yes, provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.
- b. Has a ground water monitoring program been prepared for this active sewage sludge unit?  
☐ Yes ☐ No If yes, submit a copy of the ground water monitoring program with this application.
- c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? ☐ Yes ☐ No  
If yes, submit a copy of the certification with this application.

5. Site-Specific Limits.

Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?  
☐ Yes ☐ No If yes, submit information to support the request for site-specific pollutant limits with this application.

Department of Environmental Quality  
APPLICATION for CERTIFICATE TO OPERATE

Under the Sewage Collection and Treatment Regulations 9 VAC 25-790  
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) WILLIAMSBURG TREATMENT PLANT IMPROVEMENTS PHASE I AND WILLIAMSBURG TREATMENT PLANT OXIDATION TOWER REPAIRS	
P.E. Seal Date on Cover: JANUARY 5, 2010	
Specifications Title and Date: WILLIAMSBURG TREATMENT PLANT IMPROVEMENTS PHASE I AND WILLIAMSBURG TREATMENT PLANT OXIDATION TOWER REPAIRS JANUARY 5, 2010	
Location of Project: 300 RON SPRINGS DRIVE, WILLIAMSBURG, VA 23185	County/City: JAMES CITY COUNTY
Receiving Wastewater Collection System(s): N/A	
Receiving Sewage Treatment Plant(s): N/A	
<b>PROJECT OWNER: HAMPTON ROADS SANITATION DISTRICT</b>	<b>RESPONSIBLE ENGINEER</b>
Owner Contact Name: DAVID COOLEY	Name: DOUGLAS NOFFSINGER, P.E.
Title: PROJECT MANAGER	Company Name: CH2M HILL
Address: 1436 AIR RAIL AVENUE VIRGINIA BEACH VIRGINIA 23455	Address: 11818 ROCK LANDING DR. SUITE 200 NEWPORT NEWS, VA 23606
Phone: 757-833-7483	Phone: 757-873-1511
Email: DCOOLEY@HRSD.COM	Email: DOUG.NOFFSINGER@CH2M.COM
Owner Signature and Date:  2/6/12	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: 24780

Attach copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

Design Flow: (a) average daily flow (MGD): 22.5 (b) peak flow (MGD): 45.0

For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: 0081302

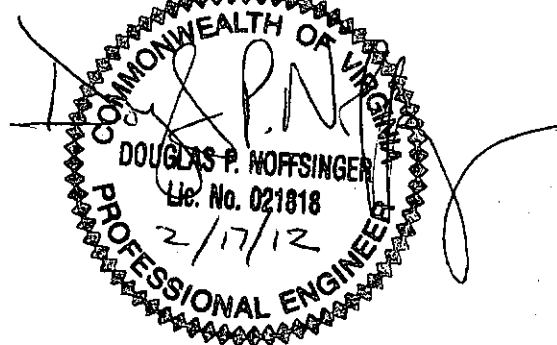
Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☐ No ☒

For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I ☒ II ☐ III ☐  
NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

☒ The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

**"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."**



Licensed Engineer's Signature and original seal (signed and dated)

☐ The following statement of completion for issuance of a Certificate to Operate under the Water Reclamation and Reuse Regulation must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

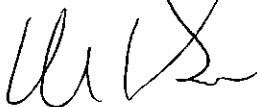
**"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."**

\_\_\_\_\_  
Licensed Engineer's Signature and original seal (signed and dated)

.....  
For DEQ use only:

In accordance with Code of Virginia 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

Mark Sauer



3/9/12

25538

Name

Signature

Date

CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.



## Project Tracking Log

e-mail: [Ellen Gilinsky](#)

**PT Log No.** 25538  
**Project Name** HRSD Wmsbrg TP Improvements Phase I & Oxidation  
**Design Capacity (gpd)** 0  
**Project Type** CTO Application  
**City / County** James City  
**Design Engineer** CH2M Hill - Newport News Details  
**Receiving Plant** -  
**Project Cost (\$)** 0  
**Reliability Class** I  
**Project Status** Active

Conditions of Approval			
<input type="button" value="Add"/>	<input type="button" value="Select"/>	<input type="button" value="Enter Approval Conditic"/>	03/09/2012
<input type="button" value="Update"/>	14 mg/l TN Limit effective		03/09/2012
<input type="button" value="Update"/> <input type="button" value="Delete"/>			
Note: This block will only modify Conditions associated with project			

**Current Status** CTO Issued Action Date  
**Project Comments** CTC pt1 #24780

**DEQ Reviewer** Permit Writer  
☐ Remove All Facilities ☒ Select New Set of Facilities

**Facility**

Alternative Technology  
 Biosolids Use (old project)  
 Chesapeake Bay Nutrient Project  
 Dechlorination  
 Disinfection

Project Facilities			
	Action Code	Action Description	Action Date
<input type="button" value="Update"/>	N	New / Received	03/02/2012
<input type="button" value="Delete"/>	CTO	CTO Issued	03/09/2012
<input type="button" value="Update"/> <input type="button" value="Delete"/>			
Note : This block will only modify Actions associated with project			
<input type="button" value="Delete"/> <input type="button" value="Update"/> <input type="button" value="Clear"/>			

**Project Information**

## Sauer, Mark (DEQ)

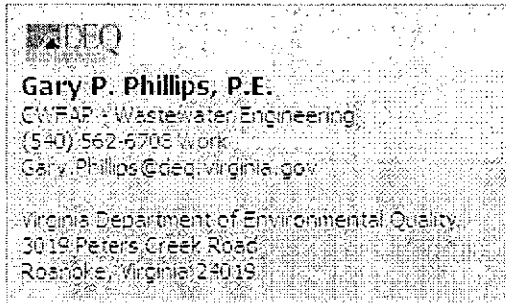
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**From:** Phillips, Gary (DEQ)  
**Sent:** Friday, March 02, 2012 10:37 AM  
**To:** Sauer, Mark (DEQ); Austin, Deanna (DEQ); Butler, Kimberly (DEQ)  
**Cc:** Gills, Walter (DEQ); Brockenbrough, Allan (DEQ)  
**Subject:** RE: CTO - HRSD Williamsburg STP  
**Attachments:** HRSD Williamsburg TN Modeling memo 07-2011.pdf

Mark,

There is no WQIF funding in that one, so you issue it. However, it should kick in the 14 mg/L TN (or at reissuance?) that Jim, Deanna, and I negotiated with HRSD (as opposed to the TN limit of 34 mg/L that they requested). Details are in the attached memo.

Thanks,  
Gary



---

**From:** Sauer, Mark (DEQ)  
**Sent:** Friday, March 02, 2012 10:26 AM  
**To:** Phillips, Gary (DEQ); Austin, Deanna (DEQ); Butler, Kimberly (DEQ)  
**Subject:** CTO - HRSD Williamsburg STP

Hey –

I got the CTO app for HRSD Williamsburg plant today. Who needs that, or should I issue that CTO?

Mark Sauer  
DEQ-TRO Water Permits Section  
757-518-2105  
[mark.sauer@deq.virginia.gov](mailto:mark.sauer@deq.virginia.gov)

## ***Virginia Department of Environmental Quality***

### ***Chesapeake Bay Program***

***Blue Ridge Regional Office***

***3019 Peters Creek Road***

***Roanoke, VA 24019***

---

To: Jim McConathy, Deanna Austin (DEQ-TRO)

From: Gary P. Phillips, P.E.

CBP - WWE

Phone: (540) 562-6708 Email: Gary.Phillips@deq.virginia.gov

Date: July 19, 2011

RE: HRSD-Williamsburg STP Nutrient Upgrade "Phase I Improvement Project" CTC  
Total Nitrogen Modeling Review Comments

Cc: Fred Cunningham – DEQ

Allen Brockenbrough, P.E. – DEQ

John Kennedy – DEQ

---

HRSD submitted a CTC application, P.E. seal dated April 29, 2011, for the nutrient upgrade of the Williamsburg STP (WSTP) - Phase I Improvement Project. The upgrade includes the addition of two adjacent anoxic zones to each of the four existing aeration basins (40% of the existing basin volume will be anoxic) with nitrate recycle resulting in a Modified Ludzack-Ettinger (MLE) configuration with supplemental carbon for denitrification. Supplemental carbon will be provided by bypassing up to 60% of the primary clarifier effluent around the existing Oxidation Towers, currently all flow from the primary clarifiers is directed to the Oxidation Towers.

### **Background**

Two previous CTC applications for the Phase I Improvement Project were received; the P.E. seal dates were January 27, 2010 and August 29, 2010. The initial application indicated the upgraded WSTP would be capable of achieving an annual average total nitrogen (TN) concentration of 9 mg/L. The MLE process is the most common biological nitrogen removal process for domestic wastewater and it is generally accepted that expected TN concentrations should fall in the 6-8 mg/L range. Following receipt of the CTC application, TRO staff initiated a permit modification in accordance with the Nutrient Reopener special condition in the facility's VPDES Permit (VA0081302). The Nutrient Reopener allows for the VPDES permit to be modified to incorporate technology-based effluent nutrient concentration annual limits when nutrient control equipment is installed. A draft permit modification was prepared with an annual average TN limit of 9 mg/L and submitted to HRSD for review and comment. HRSD and CH2MHILL resubmitted the CTC application, P.E. seal date August 29, 2010, based on a revised model to construct the same MLE process. The August 29, 2010 application indicated an annual average TN concentration of 34.7 mg/L was more appropriate. On February 2, 2011 DEQ and HRSD met to discuss the applications, the limitations of the proposed technology, and DEQ's expectations for the pending resubmittal of the CTC application.

### Current CTC Application

HRSD submitted the current CTC application with additional information regarding influent characteristics and revised Biowin modeling. The application contained a detailed discussion on the changing nature of the influent to the WSTP and proposed changes in the sewershed that would further impact the ability of the WSTP to remove nitrogen.

To date, process changes at the Anheuser Busch Brewery have resulted in approximately 50% reduction in BOD discharged to the WSTP. Proposed pretreatment (BERS process) at the brewery, if implemented as planned, would further reduce the BOD load to the WSTP. For effective nitrogen removal, sufficient BOD is a key parameter and the reduction in BOD load was correlated to the overall increase observed in the WSTP effluent TN.

Utilization of the oxidation towers further reduces the BOD load to the bioreactors. One critical purpose of the oxidation towers is to remove constituents in the incinerator scrubber blowdown that are known inhibitors of nitrification. Although the additional BOD load would be beneficial to nitrogen removal in the bioreactors, 40% of the influent is dedicated to the oxidation towers to prevent inhibition of nitrification. As such, at least one oxidation tower must remain on-line for optimal nitrogen removal.

Additionally, the average daily flow from the brewery has decreased 66% to date. The brewery wastewater temperature is higher than typical wastewater and reductions in flow from the brewery (2005-2010) were correlated with decreased influent temperature. In winter, the colder influent negatively impacts nitrogen removal.

Biowin modeling was conducted for multiple scenarios for both the 15.5 and 22.5 MGD average daily flow conditions with and without implementation of the BERS process. Modeling results for the 15.5 MGD flow scenario indicates that without implementation of the BERS process, effluent TN would likely be in the range of approximately 4-8 mg/L and with implementation of the BERS process TN concentrations would be in the range of 12-18 mg/L. Results for the 22.5 MGD flow condition modeling indicates that without the BERS process, effluent TN would be approximately 7-15 mg/L and with the BERS process, effluent TN would be approximately 11-33 mg/L. In addition, modeling of the upgraded facility at 22.5 MGD indicates that the upgrade will not impede the WSTP's ability to meet existing VPDES permit limits.

### Recommendation

Overall, the application illustrated HRSD's contention that the nutrient upgrade design was intended to achieve effective nitrogen removal at average daily flows of  $\leq 15.5$  MGD and that at the VPDES permitted flow of 22.5 MGD the selected technology would be less effective at nitrogen removal. Although the modeling indicates that under certain scenarios the expected effluent TN concentrations would be greater than 14 mg/L, HRSD has indicated willingness to accept an annual average TN concentration limit of 14 mg/L with the understanding that future upgrades may be necessary to maintain compliance as the treatment works approaches the permitted capacity of 22.5 MGD (average daily flow).

HRSD has received a combined waste load allocation for nitrogen for its seven treatment plants discharging within the James watershed. It is understood that the intent of the upgrade is to employ cost-effective measures to stem the relatively recent increases in TN discharged from the WSTP in order to meet the combined waste load allocation. HRSD has presented a reasonable



argument that the design of the upgrade was based on an average daily flow of 15.5 MGD, not the VPDES permitted average daily flow of 22.5 MGD. While the typical MLE process would be expected to achieve an effluent TN concentration in the 6-8 mg/L range, the performance of the technology is directly related to its design flow (i.e., removal percentage would decrease when the system is overloaded).

It is the practice of CBP-WWE to use the VPDES permitted average daily flow when evaluating a given treatment works design's ability to meet a permit limitation. In this case, the design flow basis for the upgrade appears to be significantly lower than the VPDES permitted design flow and HRSD's modeling indicates that at the VPDES permitted flow the effluent TN concentration would most likely exceed the technology-based range of 8-10 mg/L TN.

Furthermore, in a typical design approval process, the treatment works would be designed to meet a pre-existing or proposed VPDES permit limit. With the WSTP, the VPDES permit limit is based on what the installed technology can achieve at the permitted flow of 22.5 MGD. As such, it is the opinion of CBP-WWE that an annual average TN limitation of 14 mg/L is an appropriate compromise.

## ATTACHMENT 7

### SPECIAL CONDITIONS RATIONALE

VPDES PERMIT PROGRAM  
LIST OF SPECIAL CONDITIONS RATIONALE

Name of Condition:

B. Additional Total Residual Chlorine (TRC) Limitations and Monitoring Requirements

Rationale: Required by Water Quality Standards, 9VAC 25-260-170, Fecal coliform bacteria; other waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

C. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1.a. Sludge Reopener

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-220 C., and 40 CFR 122.44 (c)(4), which note that all permits for domestic sewage treatment plants (including sludge-only facilities) include any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the Clean Water Act.

1.b. Water Quality Standards Reopener

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria.

1.c. Nutrient Reopener

Rationale: 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

1.d. Nutrient Removal Facilities Reopener

Rationale: 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

1.e. Total Maximum Daily Load (TMDL) Reopener

Rationale: For specified waters, section 303(d) of the Clean Water Act requires the development of total maximum daily loads necessary to achieve the applicable water quality standards. The TMDL must take into account seasonal variations and a margin of safety. In addition, section 62.1-44.19:7 of the State Water Control Law requires the development and implementation of plans to address impaired waters, including TMDLs. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to incorporate the requirements of a TMDL once it is developed. In addition, the reopener recognizes that, in accordance to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other wasteload allocation prepared under section 303 of the Act.

2. Licensed Operator Requirement

Rationale: The Permit Regulation, 9 VAC 25-31-200 D and Code of Virginia 54.1-2300 et. seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators.

3. Reliability Class

Rationale: Required by Sewage Collection and Treatment Regulations, 12 VAC 5-581-20 and 120 for all municipal facilities.

4. CTC, CTO and O & M Manual Requirements

Rationale: Required by the State Water Control Law, Section 62.1-44.19; the Sewage Collection and Treatment Regulations (12 VAC 5-581 et seq); Section 401 of the Clean Water Act; 40 CFR 122.41(e); and the VPDES Permit Regulation (9 VAC-25-31-190E).

9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

5. 95% Design Capacity Notification

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.2. for all POTW and PVOTW permits. Best professional judgment is used to apply this condition to other (private) municipal treatment facilities.

6. Alternative discharge Point - 002

Rationale: This condition originated under 9 VAC 25-31-190.M. of the VPDES permit regulation and Section MN of the VPDES Permit Manual that addresses bypasses under specific conditions. Because all treatment processes must be utilized prior to discharging to the alternate location, this discharge does not meet the definition of a bypass. A BPJ decision was made to include a reference to this alternate discharge point in the Part I.A. page and further address this discharge point in a special condition. This is similar to the way alternate discharge points in other VPDES permits have been addressed by the agency. The language of the condition is based on BPJ to address the alternate discharge location, differentiate this treated discharge from an actual bypass at the treatment facility and address EPA comments on bypasses in VPDES permits. It was a BPJ decision to require reporting similar to reporting requirements under the bypass condition in 9 VAC 25-31-190.M., in accordance with the Permit Manual. Since the discharge is fully treated, it is a BPJ decision that there is no need for specific discharge criteria or conditions in order to discharge from this alternate discharge point.

Previous data have been reviewed and the determination has been made that dilution is not an issue for the treated wastewater to meet water quality standards, include general standard. Additional toxicity sampling may be requested at 100% effluent to demonstrate continued compliance with the general standard.

7. Quantification Levels Under Part I.A.

Rationale: States are authorized to establish monitoring methods and procedures to compile and analyze data on water quality, as per 40 CFR part 130, Water Quality Planning and Management, subpart 130.4.

8. Compliance Reporting Under Part I.A.

Rationale: Defines reporting requirements for toxic parameters with quantification levels and other limited parameters to ensure consistent, accurate reporting on submitted reports.

9. Effluent Monitoring Frequencies

Rationale: The incentive for reduced monitoring is an effort to reduce the cost of environmental compliance and to provide incentives to facilities which demonstrate outstanding performance and consistent compliance with their permits. Facilities which cannot comply with specific effluent parameters or have other related violations will not be eligible for this benefit. This is in conformance with Guidance Memorandum No. 98-2005 - Reduced Monitoring and EPA's proposed "Interim Guidance For Performance-Based Reduction of NPDES Permit Monitoring Frequencies" (EPA 833-B-96-001) published in April 1996.

10. Indirect Dischargers

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

11. Total Phosphorus/Total Nitrogen-Nutrient reporting calculations

Rationale: §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

12. Suspension of concentration limits for E3/E4 facilities

Rationale: 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

13. Sludge Management Plan

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-420, and 40 CFR 503.1 specify the purpose and applicability for sludge management plans. The VPDES Permit Regulation, 9 VAC 25-31-100 J.4., also sets forth certain detailed information which must be included in a sludge management plan. The VPDES sewage sludge permit application form and its attachments constitute the sludge management plan and will be considered for approval with the VPDES permit. In addition, the Biosolids Use Regulation, 12 VAC 5-585-330 and 340, specifies the general purpose and control requirements for an O&M manual in order to facilitate proper O&M of the facilities to meet the requirements of the regulation.

D.     PRETREATMENT

Rationale: The permit regulation, 9 VAC 25-31-10 et seq., Part VII, establishes the legal requirements for State, local government and industry to implement National Pretreatment Standards. The Pretreatment Standards are implemented to prevent POTW plant pass through, interference, violation of water quality standards or contamination of sewage sludge. The regulation requires POTWs with a total design flow greater than 5 MGD with significant or categorical industrial input to establish a Pretreatment Program. The regulation also may apply to POTWs with design flows less than 5 MGD if circumstances warrant control of industrial discharges.

E.     TOXICS MANAGENENT PROGRAM (TMP)

Rationale: To determine the need for pollutant specific and/or whole effluent toxicity limits as may be required by the VPDES Permit Regulation, 9 VAC 25-31-220 D. and 40 CFR 122.44 (d). See Attachment 8 of this fact sheet for additional justification.

ATTACHMENT 8

TOXICS MONITORING/TOXICS REDUCTION/  
WET LIMIT RATIONALE

# MEMORANDUM

## VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

### TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard

Virginia Beach, VA 23462

SUBJECT: Toxics Management Program (TMP) testing for HRSD-Williamsburg Plant (VA0081302)

TO: File

FROM: Deanna Austin

DATE: 4/27/12

COPIES:

HRSD-Williamsburg plant is a major municipal discharger (design flow 22.5 MGD) of treated domestic sewage. Discharge from outfall 001 to the James River will continue to be monitored for toxicity during this permit term.

There has been no change in the dilution from the previous permit; therefore the nearfield (acute) dilution factor (48) remains the same. The following calculation shows how the  $TU_a$  was derived.

Acute dilution =  $100/IWC_a$

$48 = 100/IWC_a$

$100/48 = 2.08\% IWC_a$

$LC_{50} = IWC/$ Acute Water Quality Instream criterion

$LC_{50} = 2.08/0.3 = 6.94\%$  (round to 7% effluent)

$TU_a = 1/LC_{50} \times 100$

$1/7 \times 100 = 14.29$

$TU_a = 14.3$

The following table details the results of the TMP tests for the last permit term. Since all data met the  $LC_{50}$ , a WET limit is not needed at this time and annual TMP testing should continue.

OUTFALL	SPECIES	SAMPLEDT	LC50	SURVIVAL	TU	TESTCOM	LAB
001	A.b.	08/05/08	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	C.v.	08/05/08	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	C.v.	11/18/09	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	A.b.	11/18/09	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD



001	C.v.	06/22/10	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	A.b.	06/22/10	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	C.v.	02/19/11	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	A.b.	02/19/11	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD

C.v. - *Cyprinodon variegatus*

A.b. - *Americamysis bahia*

The following TMP language is recommended for the reissuance of the HRSD-Williamsburg permit (VA0081302).

E. TOXICS MANAGEMENT PROGRAM (TMP)

1. Biological Monitoring

- a. In accordance with the schedule in 2. below, the permittee shall conduct annual acute toxicity tests for the duration of the permit. The permittee shall collect 24-hour flow-proportioned composite samples of final effluent from outfall 001 in accordance with Part 1.A. of this permit. The acute tests to use are:

48 Hour Static Acute test using Americamysis bahia and  
48 Hour Static Acute test using Cyprinodon variegatus

These acute tests shall be performed with a minimum of 5 dilutions, derived geometrically, for the calculation of a valid  $LC_{50}$ . Express the results as  $TU_a$  (Acute Toxic Units) by dividing  $100/LC_{50}$  for reporting. Both species should be analyzed at the same time from the 24-hour flow-proportioned composite sample. Toxicity samples shall be taken at the same time as the other chemical parameter monitoring listed in Part I.A. of this permit for outfall 001.

Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

- b. The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of the effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.
- c. The test dilutions shall be able to determine compliance with the following endpoints:
- (1) Acute  $LC_{50}$  of 7% equivalent to a  $TU_a$  of 14.3
- d. All applicable data will be evaluated for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of D.1.a. may be discontinued.

2. Reporting Schedule

The permittee shall report the results and supply two complete copies of the toxicity test reports to the Tidewater Regional Office in accordance with the schedule below.

(a)	Conduct first annual TMP test for outfall 001 using <u>Americamysis bahia</u> and <u>Cyprinodon variegatus</u>	By December 31, 2014
(b)	Submit results of all biological tests	Within 60 days of the sample date and no later than January 10, 2015
(c)	Conduct subsequent annual TMP tests for outfall 001 using <u>Americamysis bahia</u> and <u>Cyprinodon variegatus</u>	By December 31, 2015, 2016, and 2017
(d)	Submit subsequent annual biological tests	Within 60 days of the sample date and no later than January 10, 2016, 2017, and 2018

ATTACHMENT 9

RECEIVING WATERS INFO./  
TIER DETERMINATION/STORET DATA/  
STREAM MODELING

303(d) LISTED SEGMENTS

# TMDL Permit Review

**Date:** 4/11/2012

**To:** Jennifer Howell, TRO

✓ JSH 4/11/2012

**Permit Writer:** Deanna Austin

**Facility:** HRSD-Williamsburg STP

**Permit Number:** VA0081302

**New or Renewal:** Renewal

**Permit Expiration Date:** 1/27/2013

**Waterbody ID:** VAT G10 E James River for Outfall 001

**Topo Name:** 066B Hog Island

**Facility Address** 300 Ron Springs Road, Williamsburg VA 23185

## Receiving Stream:

<b>Stream Name:</b> James River-Outfall 001	
Click here to enter text.	
<b>Stream Data Requested?</b> See Planning Sheet	
<b>Outfall #:</b> 001	<b>Lat Lon:</b> 37 12 45 76 38 60
<b>Stream Name (2):</b> Click here to enter text.	
All stormwater outfalls are not monitored-No Exposure Certifications have been given	
<b>Stream Data Requested?</b> Click here to enter text.	

Is there a design flow change? If yes give the change. No change

## TMDL Review:

<b>Has a TMDL been approved that includes the receiving stream?</b>	
Yes, the receiving stream falls within Chesapeake Bay segment JMSOH	
<b>If yes, Include TMDL Name, Pollutant(s) and date of approval:</b>	
Chesapeake Bay TMDL: EPA approved 21/29/2010: nitrogen, phosphorous, and TSS	
<b>Is the facility assigned a WLA from the TMDL?</b>	No
<b>If Yes, what is the WLA?</b>	
VA0081302 was listed in the Chesapeake Bay TMDL under Bay segment JMSOH as a non-significant discharger. Because an aggregated WLA exists, this permit did not receive an individual WLA. The aggregated WLA is presented as a delivered load for each of the impaired 92 Bay segments. (Appendix Q)	

Review will be completed in 30 days of receipt of request.

## Additional Comments:

A PCB TMDL for the tidal James River has an anticipated completion date of 2014.

# Planning Permit Review

Date: 4/11/2012

To: Jen Howell for Kristie Britt, TRO     ✓ JSH 4/11/2012

Permit Writer: Deanna Austin

Facility: HRSD-Williamsburg STP

Permit Number: VA0081302

New or Renewal: Renewal

Permit Expiration Date: 1/27/2013

Waterbody ID: VAT G10 E James River for Outfall 001

Topo Name:                066B Hog Island

Facility Address 300 Ron Springs Road, Williamsburg VA 23185

## Receiving Stream:

<b>Stream Name: James River-Outfall 001</b>	
Click here to enter text.	
<b>Stream Data Requested? Temp, Salinity, pH most recent 2 years - ✓See Attachment 2</b>	
<b>Outfall #: 001</b>	<b>Lat Lon: 37 12 45 76 38 60</b>
<b>Stream Name (2):</b> Click here to enter text.	
All stormwater outfalls are not monitored-No Exposure Certifications have been given-No need for a tier determination	
<b>Stream Data Requested?</b> Click here to enter text.	

## Planning Review:

<b>303 (d): Indicate Outfalls which discharge directly to an impaired (Category 5) stream segment</b>	
Outfall 001 discharges to impaired segment VAT-G10E JMS01B08. Impairments include Chl a, DO, estuarine benthics, and PCBs.	
Click here to enter text.	
<b>Tier Determination</b>	
Tier	The receiving stream is a Tier 1 water due to the impairments. See Attachment 1
Tier	
<b>Management Plan</b>	
Is the facility Referenced in a Management Plan?	Yes, this facility is listed in the Virginia Water Quality Management Plan (VAC25-720-60C)
Are limits contained in a Management Plan?	Yes: TN 800,000 lbs/yr and TP 68,525 lbs/yr

**Review will be completed in 30 days of receipt of request.**

## Additional Comments:

JSH 4/11/2012



# 2010 Impaired Waters - 303(d) List

## Category 5 - Waters needing Total Maximum Daily Load Study

### James River Basin

Cause Group Code Impaired Use	Water Name Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Date
<b>G09R-02-BAC</b>	Diascund Creek						
Recreation	Escherichia coli	5A			6.88	2008	2020
<b>G09R-02-DO</b>	Diascund Creek						
Aquatic Life	Oxygen, Dissolved	5C			6.88	2008	2020
→ <b>G10E-04-CHLA</b>	James River - Lower						
Aquatic Life	Chlorophyll-a	5A	126.390			2008	2010
	Chlorophyll-a	5A	0.782			2010	2010
Open-Water Aquatic Life	Chlorophyll-a	5A	126.390			2008	2010
	Chlorophyll-a	5A	0.782			2010	2010
→ <b>G10E-05-EBEN</b>	James River Mainstem - Chickahominy R. to Hog Point						
Aquatic Life	Estuarine Bioassessments	5A	26.128			2004	2016
<b>G10E-06-BAC</b>	College Creek						
Recreation	Enterococcus	5A	0.568			2006	2018
<b>G10R-01-BAC</b>	College Run						
Recreation	Fecal Coliform	5A			2.39	2002	2014
<b>G10R-02-BEN</b>	Powhatan Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			5.35	2002	2014
<b>G10R-03-DO</b>	Dark Swamp, UT (XHC)						
Aquatic Life	Oxygen, Dissolved	5A			1.30	2010	2022
<b>G11E-05-EBEN</b>	James River - Hog Point Downstream to West side of Craney Island						
Aquatic Life	Estuarine Bioassessments	5A	24.428			2006	2018
	Estuarine Bioassessments	5A	73.889			2010	2022
<b>G11E-17-SF</b>	Ballard Creek & Bay, James River - Ballard Swamp Area and Kings Creek & Bay						
Shellfishing	Fecal Coliform	5B	0.096			1998	2010
	Fecal Coliform	5B	0.068			2010	2022
<b>G11E-18-SF</b>	Tylers Beach Boat Basin						
Shellfishing	Fecal Coliform	5B	0.003			2004	2016
<b>G11E-19-SF</b>	James River - Outside Chuckatuck Creek						
Shellfishing	Fecal Coliform	5B	0.564			2010	2022
<b>G11L-01-CU</b>	Lee Hall Reservoir						
Aquatic Life	Copper	5A		290.06		2004	2016
Wildlife	Copper	5A		290.06		2004	2016
<b>G11L-01-DO</b>	Lee Hall Reservoir						
Aquatic Life	Oxygen, Dissolved	5A		290.06		2006	2018
<b>G11L-01-HG</b>	Lee Hall Reservoir						
Fish Consumption	Mercury in Fish Tissue	5A		290.06		2010	2022
<b>G11L-01-PCB</b>	Lee Hall Reservoir						
Fish Consumption	PCB in Fish Tissue	5A		290.06		2010	2022



## 2010 Impaired Waters - 303(d) List

### Category 5 - Waters needing Total Maximum Daily Load Study

#### James River Basin

Cause Group Code Impaired Use	Water Name Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Date
<b>J16R-02-PH</b>	Blackman Creek						
Aquatic Life	pH	5C			4.45	2004	2016
<b>J17L-01-DO</b>	Swift Creek Lake						
Aquatic Life	Oxygen, Dissolved	5A		102.42		2006	2018
<b>J17R-01-BEN</b>	Swift Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			7.10	2010	2022
<b>J17R-01-DO</b>	Swift Creek						
Aquatic Life	Oxygen, Dissolved	5A			7.10	2002	2014
<b>J17R-03-PH</b>	Franks Branch						
Aquatic Life	pH	5C			10.02	2006	2018
<b>J17R-05-PH</b>	Church Branch						
Aquatic Life	pH	5C			2.56	2010	2022
<b>J17R-06-DO</b>	Nuttree Branch						
Aquatic Life	Oxygen, Dissolved	5C			5.31	2010	2022
<b>J17R-06-PH</b>	Nuttree Branch						
Aquatic Life	pH	5C			5.31	2010	2022
<b>J17R-07-PH</b>	Second Branch						
Aquatic Life	pH	5C			5.84	2010	2022
<b>J17R-08-DO</b>	Swift Creek						
Aquatic Life	Oxygen, Dissolved	5A			3.66	2010	2022
<b>J17R-09-BEN</b>	Swift Creek						
Aquatic Life	Benthic-Macroinvertebrate Bioassessments	5A			2.79	2010	2022
<b>J17R-10-PH</b>	Timsbury Creek						
Aquatic Life	pH	5C			6.65	2010	2022
<b>J17R-11-PH</b>	Long Swamp						
Aquatic Life	pH	5C			3.65	2010	2022
<b>JMSMH-DO-BAY</b>	James River CBP segment JMSMH and Tidal Tributaries						
Aquatic Life	Oxygen, Dissolved	5A	100.143			1998	2010
	Oxygen, Dissolved	5A	18.371			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	100.143			1998	2010
	Oxygen, Dissolved	5A	18.371			2006	2010
<b>JMSOH-DO-BAY</b>	James River CBP segment JMSOH and Tidal Tributaries						
Aquatic Life	Oxygen, Dissolved	5A	48.740			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	2.212			2006	2010
<b>JMSPH-BNUT-BAY</b>	James River CBP segment JMSPH and Tidal Tributaries						
Aquatic Life	Nutrient/Eutrophication Biological Indicators	5A	25.011			2010	2010





# 2010 Impaired Waters - 303(d) List

## Category 5 - Waters needing Total Maximum Daily Load Study

### James River Basin

Cause Group Code Impaired Use	Water Name Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Date
<b>APPTF-SAV-BAY</b>	Appomattox River						
Aquatic Life	Aquatic Plants (Macrophytes)	5A	2.705			2006	2010
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	5A	2.705			2006	2010
<b>EBEMH-DO-BAY</b>	Eastern Branch Elizabeth River, Broad Creek and Indian River						
Aquatic Life	Oxygen, Dissolved	5A	2.287			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	2.287			2006	2010
<b>ELIPH-DO-BAY</b>	Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)						
Aquatic Life	Oxygen, Dissolved	5A	8.162			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	8.162			2006	2010
<b>G01E-01-BAC</b>	James River						
Recreation	Escherichia coli	5A	1.466			1996	2010
	Escherichia coli	5A	2.828			2006	2010
	Escherichia coli	5A	1.964			2008	2010
<b>G01E-02-CHLA</b>	James River						
Aquatic Life	Chlorophyll-a	5A	5.512			2008	2010
Open-Water Aquatic Life	Chlorophyll-a	5A	5.512			2008	2010
<b>G01E-03-PCB</b>	James River and Various Tributaries						
Fish Consumption	PCB in Fish Tissue	5A	62.773			2002	2014
	PCB in Fish Tissue	5A	1.837			2004	2016
	PCB in Fish Tissue	5A	191.816			2006	2018
	PCB in Fish Tissue	5D			7.50	2006	2018
	PCB in Fish Tissue	5A	0.012			2008	2014
	PCB in Fish Tissue	5A	0.003			2010	2018
<b>G01L-01-BAC</b>	Falling Creek Reservoir						
Recreation	Escherichia coli	5A		88.37		2008	2020
<b>G01L-01-PH</b>	Falling Creek Reservoir						
Aquatic Life	pH	5C		88.37		2010	2022
<b>G01R-01-BAC</b>	Goode Creek						
Recreation	Escherichia coli	5A			1.25	2006	2014
<b>G01R-02-BAC</b>	Almond Creek						
Recreation	Escherichia coli	5A			2.36	2006	2010
<b>G01R-02-PH</b>	XVO and XVP (Almond Creek, UTs)						
Aquatic Life	pH	5A			0.54	2004	2016
<b>G01R-03-BAC</b>	Falling Creek						
Recreation	Escherichia coli	5A			3.11	2006	2014
<b>G01R-04-BAC</b>	Falling Creek						
Recreation	Escherichia coli	5A			16.99	2006	2018
<b>G01R-04-DO</b>	Falling Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.98	2008	2020

# ***Appendix A - List of Impaired (Category 5) Waters in 2010***

## **James River Basin**

**Cause Group Code:** G01E-03-PCB

**James River and Various Tributaries**

**Location:** Estuarine James River from the fall line to the Hampton Roads Bridge Tunnel, including several tributaries listed below: Appomattox River up to Lake Chesdin Dam  
Bailey Creek up to Route 630  
Bailey Bay  
Chickahominy River up to Walkers Dam  
Skiffes Creek up to Skiffes Creek Dam  
Pagan River and its tributary Jones Creek  
Chuckatuck Creek  
Nansemond River and its tributaries Bennett Creek and Star Creek  
Hampton River  
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

<b>City / County:</b>	Charles City Co.	Chesapeake City	Chesterfield Co.	Colonial Heights City	Dinwiddie Co.
	Hampton City	Henrico Co.	Hopewell City	Isle Of Wight Co.	James City Co.
	New Kent Co.	Newport News City	Norfolk City	Petersburg City	Portsmouth City
	Prince George Co.	Richmond City	Suffolk City	Surry Co.	Virginia Beach City
	Williamsburg City				

**Use(s):** Fish Consumption

**Cause(s) /**

**VA Category:** PCB in Fish Tissue / 5A

PCB in Fish Tissue / 5D

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs fish tissue contamination within the James River and select tidal tributaries, issued 12/13/04. During the 2002 cycle, the James River from the Fall line to Queens Creek was considered not supporting of the Fish Consumption Use due to PCBs in multiple fish species at multiple DEQ monitoring locations.

During the 2004 cycle, a VDH Fish Consumption Restriction was issued from the fall line to Flowerdew Hundred and the segment was adjusted slightly to match the Restriction.

However, during the 2006 cycle, the restriction was extended on 12/13/2004 to extend from the I-95 bridge downstream to the Hampton Roads Bridge Tunnel and include the tidal portions of the following tributaries:

Appomattox River up to Lake Chesdin Dam  
Bailey Creek up to Route 630  
Bailey Bay  
Chickahominy River up to Walkers Dam  
Skiffes Creek up to Skiffes Creek Dam  
Pagan River and its tributary Jones Creek  
Chuckatuck Creek  
Nansemond River and its tributaries Bennett Creek and Star Creek  
Hampton River  
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

## *Appendix A - List of Impaired (Category 5) Waters in 2010*

### James River Basin

The advisory was modified again on 10/10/2006 to add Poythress Run.

James River and Various Tributaries  
Fish Consumption

	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	256.441		7.50

#### Sources:

Contaminated Sediments

Source Unknown

Sources Outside State  
Jurisdiction or Borders

# Appendix A - List of Impaired (Category 5) Waters in 2010

## James River Basin

**Cause Group Code:** G10E-04-CHLA

**James River - Lower**

**Location:** The mainstem of the James River within the Mesohaline and Polyhaline portions of the James Estuary.

**City / County:** Hampton City      Isle Of Wight Co.      James City Co.      Newport News City      Norfolk City  
Portsmouth City      Suffolk City      Surry Co.

**Use(s):** Aquatic Life      Open-Water Aquatic Life

**Cause(s) /**

**VA Category:** Chlorophyll-a / 5A

The Chlorophyll a - Spring criteria for Plankton failed for the 2008 assessment. The Chlorophyll a - Summer criteria is meeting for the 2008 assessment period.

James River - Lower

**Aquatic Life**

Chlorophyll-a - Total Impaired Size by Water Type:

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

**127.172**

James River - Lower

**Open-Water Aquatic Life**

Chlorophyll-a - Total Impaired Size by Water Type:

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

**127.172**

**Sources:**

Industrial Point Source  
Discharge

Municipal Point Source  
Discharges

Non-Point Source

# Appendix A - List of Impaired (Category 5) Waters in 2010

## James River Basin

**Cause Group Code:** JMSOH-DO-BAY

**James River CBP segment JMSOH and Tidal Tributaries**

**Location:** This cause encompasses the entirety of the mainstem James River CBP segment JMSOH and tidal tributaries. From the tidal freshwater/oligohaline limit downstream to Gravel Neck/Hog Island WMA. CBP segment JMSOH.

**City / County:** Charles City Co. Isle Of Wight Co. James City Co. Newport News City Surry Co.  
Williamsburg City

**Use(s):** Aquatic Life Open-Water Aquatic Life

**Cause(s) /**

**VA Category:** Oxygen, Dissolved / 5A

The Aquatic Life Use retains the previous impaired listing. During the 2008 cycle, the entire JMSOH segment failed the 30-day Open Water Summer Dissolved Oxygen criteria. However, during the 2010 cycle, JMSOH passed the 30-day DO criteria - Summer and ROY, but there was insufficient data to assess all the other DO criteria. Therefore, the segment must remain impaired for DO and the Open Water is defined as insufficient until all DO criteria are assessed. The mainstem James River was included in EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted.

1998 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-G10E-04.

James River CBP segment JMSOH and Tidal Tributaries

Aquatic Life

Oxygen, Dissolved - Total Impaired Size by Water Type:

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

48.740

James River CBP segment JMSOH and Tidal Tributaries

Open-Water Aquatic Life

Oxygen, Dissolved - Total Impaired Size by Water Type:

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

2.212

### Sources:

Agriculture

Atmospheric Deposition -  
Nitrogen

Industrial Point Source  
Discharge

Internal Nutrient Recycling

Loss of Riparian Habitat

Municipal Point Source  
Discharges

Sources Outside State  
Jurisdiction or Borders

Wet Weather Discharges  
(Point Source and  
Combination of Stormwater,  
SSO or CSO)

# Appendix A - List of Impaired (Category 5) Waters in 2010

## James River Basin

**Cause Group Code:** G10E-05-EBEN

**James River Mainstem - Chickahominy R. to Hog Point**

**Location:** This cause encompasses the James River Mainstem, from the confluence with Chickahominy River (coincident with the watershed G10 line, at approximately RM 48.40) downstream to line between Hog Point and mouth College Creek on the north shore of the James River. CBP segment JMSOH.

**City / County:** Isle Of Wight Co. James City Co. Newport News City Surry Co. Williamsburg City

**Use(s):** Aquatic Life

**Cause(s) /**

**VA Category:** Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool yielded an unknown source for the impairment. Also listed impaired in 2004 IR based on CBP-BIBI probabilistic estuarine benthic assessment. This segment was previously included (2004 IR) in TMDL ID: VAT-G10E-05. The TMDL due date is carried from the previous 2004 IR impairment identification date.

James River Mainstem - Chickahominy R. to Hog Point

Aquatic Life

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Estuarine Bioassessments - Total Impaired Size by Water Type:

**26.128**

Sources:

Source Unknown

ATTACHMENT 10

TABLE III(a) AND TABLE III(b) -  
CHANGE SHEETS

TABLE III(a)

VPDES PERMIT PROGRAM  
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001	TN	NL / 14 mg/l	NL / 14 mg/l	Based upon the CTO issuance.	DDA 4/27/12

OTHER CHANGES:	COMMENTS:	DATE & INITIAL
Changed boilerplate language to include the VELAP information		4/27/12 DDA
Changed special condition C.11 (Sludge Management Plan) to not have a VDH reference since they no longer are involved in the program.		4/27/12 DDA
QL changed for BOD from 5 mg/l to 2 mg/l.	Changed to be consistent with other HRSD permits.	4/27/12 DDA



TABLE III(b)

VPDES PERMIT PROGRAM  
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001					

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL

## ATTACHMENT 11

### EPA PERMIT CHECKLIST

**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: HRSD-Williamsburg STP

NPDES Permit Number: VA0081302

Permit Writer Name: Deanna Austin

Date: 4/27/12

Major [X]                      Minor [ ]                      Industrial [ ]                      Municipal [X]

**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		

**I.B. Permit/Facility Characteristics – cont.**

	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	

6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

#### II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

#### II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “ant backsliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

#### II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

#### II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X

#### II.D. Water Quality-Based Effluent Limits – cont.

	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		

4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?			X
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?			X
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?		X	
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

#### II.E. Monitoring and Reporting Requirements

	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

#### II.F. Special Conditions

	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?	X		

#### II.F. Special Conditions – cont.

	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

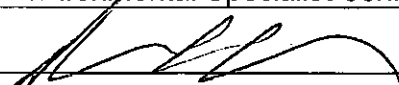
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions

II.G. Standard Conditions	Yes	No	N/A
1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
<b>List of Standard Conditions – 40 CFR 122.41</b>			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

### Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Deanna Austin</u>
Title	<u>Environmental Specialist Senior II</u>
Signature	<u></u>
Date	<u>4/27/12</u>



ATTACHMENT 12

CHRONOLOGY SHEET

# Chronology

Friday, April 27, 2012

**Facility Name:** HRSD - Williamsburg Sewage Treatment Plant

VA0081302

<i>Event</i>	<i>Date</i>	<i>Comment</i>
Application fee deposited:	—	N/A Reissuance
First Application Reminder Phone Call:	—	N/A App came in 4/4/12
FS/SOB draft permit sent to State Agencies (list i:	—	Not Requested
Second Application Reminder Phone Call:	—	N/A App came in 4/4/12
VDH concurrence on draft permit:	—	Not Requested
VMRC concurrence on draft permit:	—	Not Requested
Site visit:	— 4/26/2011	by Mark Kidd
Site inspection report:	— 4/28/2011	
Application received at RO 1st time:	— 4/4/2012	
Public notice authorization received from owner:	4/4/2012	
App complete letter sent to permittee:	— 4/10/2012	
App sent to State Agencies (list in comment field):	— 4/10/2012	VDH, DSS, VMRC
Application Administratively complete:	— 4/10/2012	
Application totally / technically complete:	— 4/10/2012	
Comments rec'd from State Agencies on App:	— 4/19/2012	VDH 4/17/12 DSS 4/19/12
Draft permit developed:	— 4/27/2012	
Old expiration date:	1/27/2013	
Permit effective:	— 1/27/2013	
First DMR due:	— 3/10/2013	
Permit expires:	— 1/28/2018	